What Causes the Underpricing of H Shares' IPO

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ABSTRACT:

This paper provides four new explanations for worldwide IPO underpricing including the issuing firm's historical growth rate provided in the IPO Prospectus, the issuing firm expected growth rate provided in the IPO Prospectus, the range of the IPO issue price provided in the Prospectus and the cross-border listing effect. We study the H shares and find that the average IPO underpricing level of H shares is about 16.8%, which is much closer to the level in developed countries rather than in China. We examine some empirical factors which cause the underpricing of H shares' IPO and discover that the better the market condition is before IPO, the higher the IPO underpricing level is; the larger the range of issue price is, the lower the IPO underpricing level is; the higher the historical profit growth rate is, the lower the IPO underpricing level is; finally, firms which list IPO share in Hong Kong and America stock markets simultaneously will have higher level of underpricing in IPO.

摘要：

本文提出了關於首次公開發行溢價問題的四種新的解釋。它們包括：發行公司在招股說明書中提供的歷史利潤增長率、發行公司在招股說明書中提供的預期利潤增長率、招股說明書中所提供的首次公開發行價格區間的大小和兩地上市對溢價現象的影響。我們對H股進行了研究，發現H股的平均溢價水平爲16.8%。這個溢價水平更接近發達國家的水平，但和中國的情況差別很大。 我們對造成H股首次發行溢價的原因進行了實證分析，並有下列發現：市場狀況越好，溢價水平越高；發行價格區間中上下限差別越大，溢價水平越低；發行公司歷史利潤增長率越高，溢價水平越低；最後，如果發行公司在香港和美國同時進行首次公開發行，那麼溢價水平會比較高。

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CHAPTER 1:

Introduction

Initial public offerings of shares (IPOs) are frequently issued at prices substantially less than the market price on the first day of listing. Such IPO underpricing has been widely documented and appears internationally pervasive. Ibbostson, Sindelar and Ritter (1994) investigate 10616 IPOs in America and find the average underpricing level is 15.3%, McGuinness (1992) points out the average underpricing level in Hong Kong is 16.6% after investigating 92 IPOs, while How and Low (1993) find the average underpricing level in Australia is 16.1% by studying 523 firms. In China, however, the average level of IPO underpricing is too high to believe. Su and Fleisher (1999) investigate 308 cases from 1987 to 1995 and find that the average IPO underpricing level is 948.5%.

In this paper, we investigate what is the result of a "combination"— H shares[1],

[1] The Mainland enterprises listed in Hong Kong Stock Exchange include H shares and red-chips. The definitions from Hong Kong Exchanges and Clearing Limited (HKEx) are as follows:

H share companies refer to companies incorporated in the People's Republic of China and approved by the China Securities Regulatory Commission for a listing in Hong Kong. Shares of these Chinese enterprises are listed on the Stock Exchange, subscribed for and traded in Hong Kong dollars, or other currencies, and referred to as H shares. After finding its way into the Listing Rules, the term H shares has been accepted by and widely used in the market. The letter H stands for Hong Kong.

Red-chips refer to companies which have at least 30% shareholding held in aggregate by Mainland China entities[1], and/or indirectly through companies controlled by them, with the Mainland China entities being the single largest shareholders in aggregate terms. Or if the shareholding of the company held in aggregate directly and/or indirectly by Mainland China entities is below 30% but is 20% or above and there is a strong influential presence, on a judgmental basis, of Mainland China-linked individuals on the company's board of directors.

There is a crucial difference between H-share companies and Red-chip companies. That is H share

which are China state-owned enterprises (SOEs) listed in Hong Kong Stock Exchange.

In 1993, "TSINGTAO Brewery" went public in Hong Kong, becoming the first Chinese company listed in Hong Kong stock market. Until the end of 2003, there are 92 (64 are listed in the Main Board and 28 are listed in the Growth Enterprise Market) Chinese companies issued H shares in Hong Kong, and have raised about 150 billion Hong Kong dollars. This kind of companies play a more and more important role in Hong Kong stock market. As a result, this paper analyzes the IPOs of these companies, especially the underpricing of the IPOs.

After investigating 76 H share firms' IPOs, we find the average level of H share' IPO underpricing is about 16.8%,[2] which resembles the IPO underpricing level in developed countries rather than in China.

H share firms have both Chinese companies' specific features and exposure to maturely developed financial market. So explanations for worldwide IPO underpricing or explanations for IPO underpricing in China alone cannot be the proper reasons for H shares' IPO underpricing. We should explain H shares' IPO

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companies are incorporated in the People's Republic of China and subject to the law in China Mainland, while Red-chip companies are incorporated in Hong Kong and subject to the law in Hong Kong. In this paper, I use H shares since they have exactly the same fundamentals as other companies listed on Shanghai and Shenzhen Stock Exchange.

[2] All the underpricing level in this paper is measured basing on the final issue price, even if the issue price in the Prospectus is a range.

underpricing basing on the explanations of worldwide IPO underpricing and the special characteristics of the new-issue and offering process in the Chinese market.

We select the variables, which are used as proxies for potential explanations for IPO underpricing, mainly basing on explanations for worldwide IPO underpricing and explanation for IPO underpricing in China. We divide all these variables into two categories. One is ex ante variables, which could be known by investors before they decide to purchase the IPO or not. Most of the ex ante variables can be found in IPO Prospectus. One of the contributions this article makes is teaching investors how to extract useful information from IPO Prospectus. The other category is ex post variables, which can only be observed by investors after IPO firms are listed in stock exchange.

Finally, we run regressions to test the potential explanations for H share's IPO underpricing.

CHAPTER 2:

Literature Review

2.1 Worldwide IPO Underpricing

IPO underpricing is the short-run abnormal returns on IPOs. The IPO's underpricing level is the percentage investors could earn in short term by investing in IPO shares. It is commonly perceived as a contradiction to capital market efficiency and has been found in a number of countries. The "raw" percentage degree of underpricing (UP) of an IPO can be defined as:

$UP = [(P-OP)/OP]*100\%$[3]

where:

OP=offer price of the IPO

P= price observed at the end of the first trading day[4]

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[3] Given a lag between the setting of the offer price and the beginning of trading on an exchange (anywhere from one day to two weeks or more), the price observed in the market on the first day of trading may be high (low) relative to the offer price simply because the stock market as a whole has risen (fallen) over this period. Thus, in analyzing underpricing, researchers need to control for the performance of the stock market in general. More specifically:

$EX = UP - [(I-i)/i]$

where:

EX= excess market or risk-adjusted initial returns

I= level of the general market share index at the time of listing

i= level of the market share index at the time offer is announced

Above is a more accurate way to calculate IPO underpricing. However, many studies show that using UP and EX as IPO underpricing level will draw the same conclusion when we test the explanations of underpricing. So, this paper simply use UP as IPO underpricing level.

[4] In many literatures, P is also defined as the average price of the first five trading days' close prices, the average price of the first seven trading days' close prices or the average price of the first fifteen trading days' close prices.

The phenomenon that initial public equity offerings (IPOs) are probably underpriced exists all over the world. That means most companies on earth leave money on the table at the time they issue new stocks. Table 1 shows the extent to which IPOs are underpriced all over the world.

Table 1

IPO underpricing all over the world

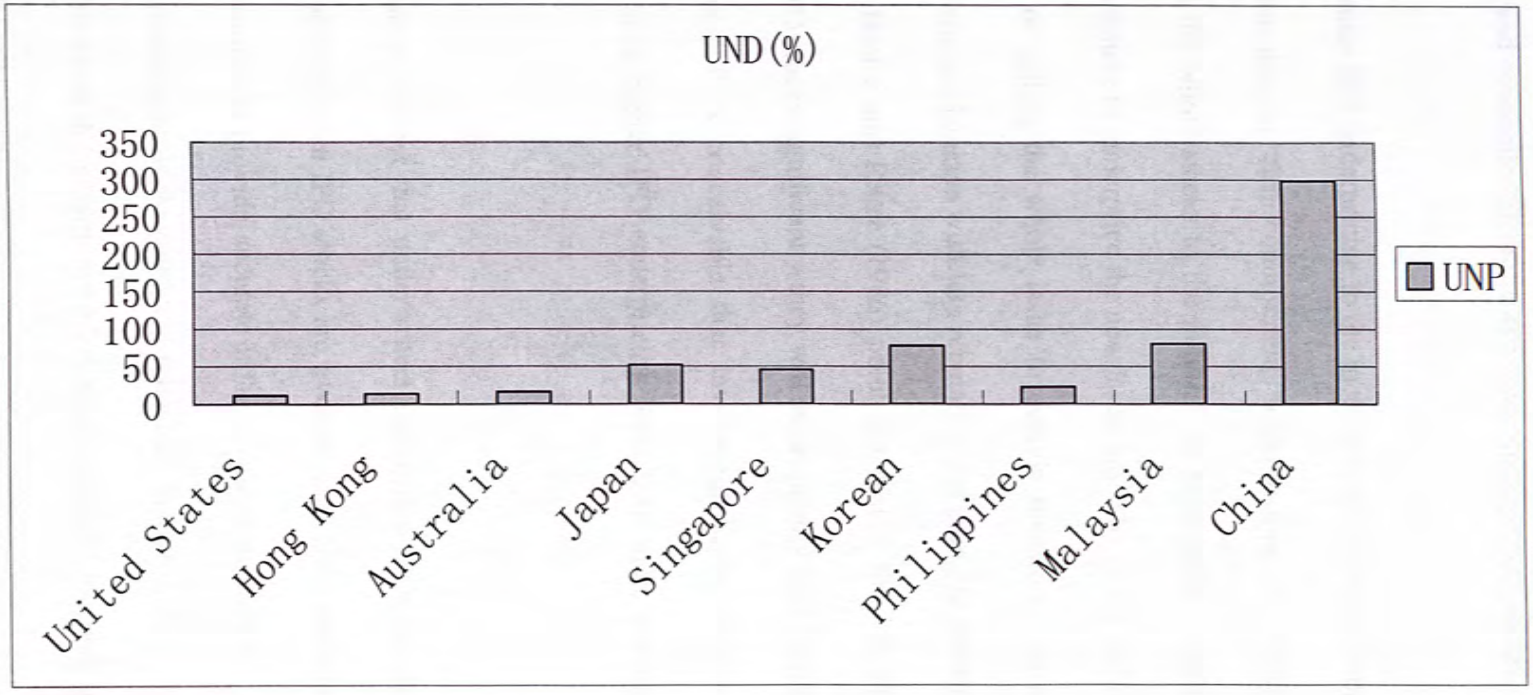
	No. of Issues	Study Period	UND (%)
United States			
Ibbostson, Sindelar and Ritter(1994)	10616	1960-1992	15.3
Field and Sheehan(2003)	953	1988-1992	11
Hong Kong			
Dawson and Hiraki(1985)	31	1979-84	10.9
Dawson(1987)	21	1978-93	13.8
McGuinness(1992)	92	1980-90	16.6
Australia			
Finn and Higham(1998)	93	1966-78	29.2
How and Low(1993)	523	1979-89	16.1
Philippines			
Sullivan and Unite(1999)	104	1987-97	22.69
Japan			
Dawson and Hiraki(1985)	114	1979-84	51.9
Singapore			
Dawson(1984)	29	1979-83	37.5
Koh and Walter(1989)	70	1973-87	27
Saunders and Lim(1990)	17	1987-88	45.4
Koh, Lim and Chin(1992)	53	1975-87	37.6
Malaysia			
Dawson(1987)	21	1978-83	166.6
Isa(1993)	132	1980-91	80.3
Korean			
Dhatt, Kim and Lim(1993)	347	1980-90	78.1
China			
Chen, Firth and Kim (2003)	701	1992-1997	298
Kim, Rui and Xu (1998)	45	1993	594
Su and Fleisher (1999)	308	1987-1995	948.6

Note: Sources from "A Guide to the Equity Markets of Hong Kong." McGuinness, Paul B., 1999 Oxford University Press.

Chart 1

IPO underpricing all over the world

We use the latest result in table 1 for each country, namely United States, Hong Kong, Australia, Japan, Singapore, Korean, Philippines, Malaysia, and China. We can see a trend that the more developed one country's financial market is, the lower the underpricing level is.



Why firms raise fewer funds in the new-issue process than the market indicates they should is a crucial public policy issue. Several reasons have been proposed in the institutional, finance, and economics literature as to why underpricing occurs.

The first view attributes IPO underpricing to the incentive of investment bankers. Saunders (1990) points out that, in "firm commitment" underwriting, an investment banker is obliged to sell the whole stocks to the public. A monopolist investment banker might have the incentive to underprice the new issue, since by doing so he can increase the probability of selling the whole issue to outside investors. In some studies, it is said that investment bankers with less reputation are going to underprice the issue significantly. Beatty and Ritter (1986) point out that if the investment bankers underprice the IPO stocks significantly they will subsequently lose reputation capital and market share. It is conceivable that investment banks with lower reputation are likely to have higher IPO underpricing level than more prestigious banks.

Saunders (1990) also points out that underwriters underprice IPOs due to the fear of potential legal problems when IPO stocks are overpriced. Underwriters and company directors are required to provide accurate information to investors. They will probably face legal punishment if they provide false information and overprice the underlying stocks. To avoid this situation, underwriters would rather underprice the initial public offerings than overprice them.

The second opinion views the underpricing as a dynamic strategy employed by issuing firms (Welch 1989). A good firm will underprice its issue to attract public investors. After gaining some "sweet" from the issuer, public investors are more willing to buy this firm's future offerings. The owners of the firm will benefit from this strategy because they can raise more money in secondary offerings at the higher market price. Thus, the cost of underpricing the IPO is offset by the benefits from the secondary offering.

The third point of view is Rock (1986)'s "winner's curse", which is most frequently cited in the IPO underpricing study. This theory divides the investors into informed investors and uninformed investors and divides the issuers into good issuers and bad issuers. Because the informed investors have more information about the IPO, they are more likely to get good IPOs then uninformed investors. As a result, the issuers must compensate the uninformed investors by underpricing their IPOs. Beatty and Ritter (1986) extend Rock's model and point out that the greater the uncertainty surrounding the post-issue value of IPO shares, the greater the advantage to become an informed investors.

The fourth explanation is about the reporting accountant/auditor firms' reputations. Titman and Trueman (1986) show that prestigious accounting firms provide more accurate IPO information to the market. Thus, the reputation of the

accounting firm can also be negatively related to the level of IPO underpricing (Balvers, McDonald and Miller, 1988).

The fifth point of view indicates that IPO underpricing is large during rising markets and low during declining markets. This result can be explained by stocks having relatively high betas at the time of issue (Ibbotson,1975). Thus, IPO underpricing level is positively biased during a rising market condition and negatively biased during a falling market.

2.2 IPO Underpricing in China

China started to list its state owned enterprises in capital markets in 1984 to facilitate the transformation from planed economy to market economy. There are two major kinds of shares, issued by companies incorporated in Mainland China, listed on stock exchanges in China. They are A shares and B shares.

A shares are listed and traded on the Mainland A-share markets (Shanghai and Shenzhen) and quoted in RMB. They cannot be traded by foreign investors on the stock exchange.

B shares are listed and traded on the Mainland B-share markets (Shanghai and Shenzhen) and quoted in foreign currencies. They are not listed on the Stock

Exchange. In the past, only foreigners or foreign institutions were allowed to trade B shares. Since February 2001, Mainlanders have also been permitted to trade B shares, but they must trade through legal foreign currency accounts.

In China, the average level of IPO underpricing is too high to believe. Su and Fleisher (1999) investigate 308 cases from 1987 to 1995 and find that the average IPO underpricing level is 948.5%. This abnormal phenomenon is highly related to the political and economic environment in China.

The first explanation is about the high degree of microeconomic uncertainty in China's stock market. Using a sample of 87 Shanghai firms, Mok and Hui (1998) show that ex ante uncertainty explain the pattern of A-share IPO returns. Secondly, the shareholding system in China is distinctive. In China, the government holds large stake of the state-owned enterprises, there can be two consequences. On one hand, the government is unwilling to leave so much its own money on the table, so the level of IPO underpricing should be low. On the other hand, the larger stake the government holds the worse the liquidity is, so the underpricing should be high. Therefore, this issue is still open to further study.

CHAPTER 3:

New Explanations for IPO Underpricing

Besides those five explanations for worldwide IPO underpricing mentioned above, this paper originates another four potential explanations, which are rarely discussed in other studies.

The first one is the historical growth rate of the issuing firm. Firms which want to list in stock markets are required to provide three years' trading records prior to listing in the IPO Prospectus. Investors can value the underlying IPO shares basing on those historical trading record. On one hand, the higher the historical growth rate is, the higher the investors value the stock after issuing, so the higher the underpricing level is. On the other hand, when the historical growth rate of an IPO firm is higher, the IPO stocks are more attractive to investors, which gives the investment banks a chance to set the issue price as high as possible to raise more money. This leads to a lower underpricing level.

The second one is the expected growth rate of the issuing firm. In most IPO Prospectuses, underwriters will forecast the financial condition of the IPO firms in the coming year. As the first explanation, the higher the expected growth rate is, the higher the investors value the stock after issuing, so the higher the underpricing level is. On the other hand, when the expected growth rate of an IPO firm is higher, the

IPO stocks are more attractive to investors, which gives the investment banks the chance to set the issue price as high as possible to raise more money. This leads to a lower underpricing level.

The third explanation is the range of the IPO issue price provided in the Prospectus. When the issue price is a range rather than a fixed price, the investment bank has a chance to adjust the issue price after gaining more information about investors' preference in the road show. This could lead to more accurate IPO pricing and lower underpricing level. In China, the China Securities Regulatory Commission has just allowed Chinese A shares and B shares to set their IPO prices in terms of a range since year 2005, while before that the IPO prices are required to be set at a fixed price. So the research on the effect of the range of IPO issue price on the IPO underpricing can make some contribution to policy design for Chinese capital markets.

The last but not least explanation is the cross-border listing effect. There are four reasons why a company wants to list its securities abroad. Firstly, a company may desire a broader diversification of its capital sources across international boundaries. Secondly, concern over take-overs by domestic competitors is minimized by global diversification of the company's shares. Thirdly, in the case where a company wants to raise additional external financing, exposure to broader capital markets access to additional resources. Last, listing a company abroad

provides additional advertising opportunities for the company's products and services. Some Chinese firms list their shares in Hong Kong and American stock markets simultaneously. Raising more money and providing additional advertising opportunities are likely to be the main incentives of these cross border listings. So we expect there to be a positive cross border listing effect, that is, if a firm lists its IPO in more than one stock market simultaneously, the IPO underpricing level will be higher. In this way, the IPO firm can attract more attention from overseas investors by putting more money on the table.

CHAPTER 4:

Data, Methodology and Empirical Results

4.1 Data

We investigate 76 companies from 1993 to 2003 of the 92 SOEs issuing H shares in Hong Kong. We exclude companies without the price data on their IPO underpricing levels. In the literature, underpricing level can be measured by the percentage difference between the first trading day's closing price and the offer price. We find that the average IPO underpricing level of SOEs listing in Hong Kong stock market is about 16.8%, which is much closer to the level in developed countries than in China. Table 2 provides sample firms' company names, dates of issue, the underpricing levels measured in one-day window and the statistical description of underpricing levels.

Table 2

Sample firms' company names, dates of issue, the underpricing levels measured in one-day window and the statistical description of underpricing levels.

Company Name	IPO Issue Date	Underpricing Level (%)
JILIN CHEMICAL IND.'H' *	1995-5-23	236.00
JIAODA KUNJI HI - TECH 'H'	1993-12-7	192.93
JIANGSU NANDASOFT CO.'H'	2001-4-24	158.33
BEIJING NORTH STAR 'H' *	1997-5-14	94.79
CATIC SHENZHEN 'H' *	1997-9-29	82.08
FUJIAN ZIJIN MINING'H' *	2003-12-23	72.73
MAANSHAN IRON & STL. 'H' *	1993-11-3	60.79
ZHENGZHOU GAS CO.LTD.'H' *	2002-10-29	58.00
PICC PR.& CLTY. CO.'H' *	2003-11-6	50.00
NTHEAST.TIGER PHARM. 'H'	2002-2-28	38.46
QINGLING MOTORS 'H' *	1994-8-17	32.85
BEIREN PRINTING 'H' *	1993-8-6	32.21
ZHEDA LANDE SCITECH'H'	2002-5-3	31.33
TONG REN TANG TECH.'H' *	2000-10-31	31.10
TSINGTAO BREWERY 'H' *	1993-7-15	28.57
GREAT WALL AUTOM.'H' *	2003-12-15	28.20
SHENZHEN EXPRESSWAY'H' *	1997-3-12	26.14
CHINA LIFE INSURANCE 'H' *	2003-12-18	24.83
AVICHINA IND.& TECH. 'H' *	2003-10-30	21.49
BEIJING DATANG POWER 'H' *	1997-3-21	20.04
XI'AN HAITIAN ANTENNA'H'	2003-11-5	17.65
TRAVELSKY TECH. 'H'	2001-2-7	16.46
GUANGZHOU SHIP. 'H' *	1993-8-6	15.38
WUMART STORES INC. 'H' *	2003-11-21	13.34
BEJ BEIDA JADE BIRD'H'	2000-7-27	13.18
CHINA SHIPPING DEV.'H'	1994-11-11	13.01
CHINA OILFIELD SVS.'H' *	2002-11-20	12.50
FIRST TRACTOR 'H' *	1997-6-23	12.22
DONG FANG ELECT.MCH. 'H' *	1994-6-6	12.19
BYD CO.LTD. 'H' *	2002-7-31	11.42
WEIQIAO TEXTILE CO.'H' *	2003-9-24	11.18
LIANHUA SUPERMARKET'H'	2003-6-27	9.68
GUANGSHEN RAILWAY 'H' *	1996-5-14	8.25
JINGWEI TEXTILE MACH.'H'	1996-2-2	7.75
NINGBO YIDONG ELT. 'H'	2003-11-14	6.00
ZHEJIANG GLASS 'H'	2001-12-10	5.57

HAINAN MEILAN ARPT.'H' *	2002-11-18	5.16
CHINA EASTERN AIRL.'H' *	1997-2-5	5.07
ZHEJIANG EXPRESSWAY'H' *	1997-5-15	5.04
JIANGXI COPPER 'H' *	1997-6-12	4.44
ANGANG NEW STEEL 'H' *	1997-7-24	4.29
CHINA STHN.AIRL. 'H' *	1997-7-31	3.72
CHENGDU TOP SCI - TECH 'H'	2001-3-30	2.78
SINOTRANS LTD. 'H' *	2003-2-13	2.74
GREAT WALL TECH. 'H' *	1999-8-5	2.38
YANZHOU COAL MINING'H' *	1998-4-1	2.27
BAOYE GROUP CO.'H'	2003-6-30	1.40
BEIJING CAPITAL LAND 'H' *	2003-6-19	0.00
SINOPEC YIZHENG CHM. 'H'	1994-3-29	-0.21
YANTAI N ANDRE JUICE 'H'	2003-4-22	-0.81
ANHUI CONCH 'H' *	1997-10-21	-1.32
CHINA TELECOM 'H' *	2002-11-15	-1.36
LAUNCH TECH CO.LTD.'H'	2002-10-7	-1.39
HARBIN POWER EQUIT.'H'	1999-6-30	-3.10
SHAANXI NW.NEW TECH. 'H'	2003-7-3	-4.80
NTHEAST.ELEC.DEV. 'H'	1995-7-6	-5.00
PETROCHINA CO. 'H'	2000-4-7	-5.47
NANJING PANDA 'H' *	1996-5-2	-6.10
NANJING DAHE OUTDOOR 'H'	2003-11-13	-6.60
MUDAN AUTOMOBILE SHS.'H' *	2001-12-18	-7.08
SINOPEC BEJ YANHUA 'H'	2000-10-19	-7.87
TIANJIN CAPITAL ENV. 'H'	1994-5-17	-8.33
ANHUI EXPRESSWAY CO. 'H'	1996-11-13	-10.73
HUANENG PWR.INTL. 'H' *	1998-1-21	-11.36
JIANGSU EXPRESSWAY 'H' *	1997-6-27	-11.58
SINOPEC ZHENHAI REFN.'H'	1994-12-2	-11.76
CAPINFO CO.LTD. 'H'	2001-12-21	-12.50
JILIN CHANGLONG BIO'H'	2001-5-24	-12.52
CHENGDU PUTIAN TELC. 'H' *	1994-12-13	-13.39
CHONG QING IRON&STL'H' *	1997-10-17	-15.20
GUANGDONG KELON 'H' *	1996-7-23	-15.53
CCID CONSULTING CO.'H'	2002-12-12	-18.40
SICHUAN EXPRESSWAY 'H' *	1997-10-7	-18.71
GUANGZHOU PHARM. 'H' *	1997-10-30	-18.79
SHENYANG PUBLIC UTL. 'H' *	1999-12-16	-18.82
LUOYANG GLASS 'H' *	1994-7-8	-20.00
Mean of Underpricing Levels		16.81
Median of Underpricing Levels		5.06

Max of Underpricing Levels	236.00
Min of Underpricing Levels	-20.00
Standard Deviation of Underpricing Levels	43.60

4.2 Methodology

SOEs listed in Hong Kong Stock Exchange are "combinations". They have both Chinese companies' specific characters and exposure to maturely developed financial market. Thus, explanations for worldwide IPO underpricing or for IPO underpricing in China alone cannot justify the H shares' IPO underpricing. We should explain H shares' IPO underpricing basing on the nine explanations of IPO underpricing all over the world and the two special characteristics of the new-issue and offering process in the Chinese market.

All the variables used as proxies for potential reasons for IPO underpricing can be divided into two categories. One contains ex ante variables, which could be known by investors before they decide to purchase the IPO or not. This kind of variables includes firms' size, revenue growth rate before going public, P/E ratio, P/B ratio, etc. The other category contains ex post variables, which can only be observed by investors after IPO firms are listed on stock exchange. Ex post variables include whether the IPO firms will make seasoned equity offering (SEO) in a short period after IPO and the standard deviation of post-listed returns.

The ex ante variables are extremely important and useful since they help investors to predict the IPO's potential underpricing level and to make a better decision. Due to the lack of history trading record about the IPO firms, it is extremely difficult for investors to analyze those firms' intrinsic value. The main

and most crucial source of firms' ex ante information is IPO Prospectus. A detailed prospectus is required before new securities can be offered to the public in an initial public offering (IPO). The prospectus provides information about the offering itself, a brief history of the firm's business, information related to past financial performance, ownership details, and the risk associated with the investment. All the above-mentioned information could have some relations with IPO's underpricing level.

We choose the following variables, which could have a significant relationship with IPO's underpricing level, from the Prospectus, partly basing on the nine explanations for worldwide IPO underpricing and two special characteristics of the new-issue and offering process in the Chinese market.

The first variable is the reputation of IPO firm's underwriter. Unlike A share firms' IPOs, most of which are underwritten by Chinese local investment banks, H-share firms invite a great many international investment banks as their underwriters. It is not uncommon to see the first tier of international investment banks, such as Goldman Sachs, Morgan Stanley, Merrill Lynch and so on, acting as the leading underwriters in H-share IPOs. Recall the first explanation we have listed in Chapter 2, we can see that investment banks intend to underprice the IPO stocks to sell all of them and avoid legal punishment, while prestigious investment banks do not dare to underprice too much or they will subsequently lose reputation capital and market

share. Furthermore, investment banks with high reputation have more profound expertise than other I-banks, which makes them price the IPO stocks more accurately. This means prestigious investment banks could set IPO issue price as high as possible to approach IPO shares' intrinsic value. This way, they can earn more commission, which is some certain percentage of total amount of money raised from the market, in the IPO activity. This argument implies the more prestigious the underwriter is, the lower the IPO underpricing level is.

To test the significance of the relationship between underwriter's reputation[5] and IPO underpricing level, we divide all the underwriters into three categories. The first category is international top 10 investment banks, which are Goldman Sachs, Morgan Stanley, Credit Suisse First Boston, Merril Lynch, J.P. Morgan Chase, Fidelity Investments, Salomon Smith Barney, Lehman Brothers, Citibank and UBS Warburg. The second category is international non-top-10 investment banks. The last category is Chinese domestic investment banks. The underwriter's name can be found in IPO Prospectus's Preface.

The second variable is the reputation of the IPO issuer's accounting firm. As the fifth explanation we mentioned in Chapter 2, prestigious accounting firms are less likely to distribute inaccurate information or they will subsequently lose reputation capital and market share. More prestigious accounting firms will help investment

[5] In the joint underwriting cases, only the leading investment bank will be considered in this paper.

banks to price the IPO shares more accurately. This argument implies that the more prestigious the accounting firm is, the lower the IPO underpricing level is.

In many studies, the accounting firms are divided into two categories. One is international "Big Four" accounting firms, namely PricewaterhouseCoopers, KPMG, Ernst & Young and Deloitte & Touche, while the other category is non-Big Four accounting firms. However, nearly every H share issuer hires one of the Big Four accounting firms during the IPO activity. In my paper, we divide the accounting firms into five categories. The first category is PricewaterhouseCoopers. The second category is KPMG. The third category is Ernst & Young. The fourth category is Deloitte & Touche. The last category is non-Big Four accounting firms. It is reasonable to categorize accounting firms this way, since although PricewaterhouseCoopers, KPMG, Ernst & Young and Deloitte & Touche are all Big Four accounting firms, their popularities in China differ from each other hugely.[6] The accounting firm's name can be found in IPO Prospectus's Appendix 1.

The third variable is the ex ante uncertainty of the firm that is going to make potential IPO. We mentioned ex ante uncertainty in the fourth explanation in Chapter 2. The more the firm's ex ante uncertainty is, the more the issuer should underprice the IPO shares to compensate investors. There are many variables which can be used as proxies for firm's ex ante uncertainty. A commonly used proxy is the

[6] PricewaterhouseCoopers and KPMG have much more business than Ernst & Young and Deloitte & Touche in China.

size of the firm. It is shown that firms with larger size, on average, have more stable earnings and are hence less risky. Therefore, the larger the size is, the lower the ex ante uncertainty is. In my paper, we use total asset, money raised in IPO, which is the issue price times the number of shares issued to the public in IPO, and firm's market capitalization, which is the issue price times the total number of the firm's shares, to measure firm's size. Age is also used as a proxy for risk in many IPO articles, because firms that have been operating for several years prior to the IPO are better positioned to reduce the information asymmetry around the IPO by providing several years of performance data. But, for H share firms, age is not a good proxy, since a lot of H share firms are spun off from long-lived parent companies and have short history before issuing IPO. So, in my paper, we do not use age as a proxy. This argument suggests that the larger the IPO firm's size is, the lower the IPO underpricing level is.

The total asset of a firm is measured at the end of the year before listing. It can be found in Prospectus' Summary section and/or Appendix 1. The variable money raised in IPO is defined as the product of the issue price and the total number of the firm's shares. Both the issue price and the total number of the firm's shares can be found in Prospectus' Preface.

Next variable is the growth rate of IPO firm's profit. As mentioned in the first and second explanations in Chapter 3. The higher the opportunity is, the higher the

investors value the stock after issuing, so the higher the underpricing level is. However when the growing opportunity of an IPO firm is higher, the IPO stocks are more attractive to investors, which gives the investment banks a chance to set a higher issue price. This leads to a lower IPO underpricing level. So, whether growth rate has a positive or a negative effect on IPO underpricing level is still open to question. Prospectus provides IPO firm's trading record in three consecutive years prior to issue, as well as underwriter's issue year profit forecast. In this paper, we use three years' profits to shareholders to calculate geometric average growth rate of profits to shareholders, and divide forecasted profit by profit in last year prior to issue to calculate the expected growth rate. Historical trading record and forecasted profit can be found in Prospectus' Summary. This argument implies that the higher/lower the historical profit growth rate is, the lower the IPO underpricing level is; the higher/lower the expected profit growth rate is, the lower the IPO underpricing level is.

As mentioned in the Introduction that Chinese state owned enterprises (SOEs) have some special characters. One of them is that Chinese government holds a significant proportion of SOE's stake. The higher the proportion government holds, the less shares SOE firm will sell to public. When the proportion SOE firm sell to public is low, the government can endure the sacrifice of leaving a small amount of money on the table during IPO activity. In this case, the underpricing level is high and there will be a boom of stocks' price just after the IPO stocks listed on stock

exchange, which makes a good signaling effect. Government's proportion in SOE's stake immediately after IPO is done can be found in Prospectus' Substantial Shareholders Section. This argument suggests that the more proportion government holds in SOE's stake, the higher the underpricing level is.

A very important feature of H share's IPO is different from the one of A share's IPO. H share firm may give investors a range of issue price, which means the final issue price will be less than some upper price limit and more than some lower price limit, while in China, the issue price is fixed before investors subscribe the IPO stocks. As mentioned in the third explanation in Chapter 3, when the issue price is a range, the investment bank has a chance to adjust the issue price after gaining more information about investors' preference in the road show. The range of the issue price can be found in the Prospectus' Summary. This argument implies the larger the range of issue price is, the lower the IPO underpricing level is.

As mentioned in Chapter 3, some Chinese firms list their shares in Hong Kong and American stock markets simultaneously. Raising more money and providing additional advertising opportunities are likely to be the main incentives of these cross border listings. Thus, we expect there to be a positive cross border listing effect, that is, if a firm lists its IPO in more than one stock market simultaneously, the IPO underpricing level will be higher.

The next variable is price to book ratio. IPO with relatively low initial price to book ratio is more likely to be undervalued. Book value per share, which is net asset per share, just before issue can be found in Appendix 1 in IPO Prospectus. This argument implicates the lower the IPO's initial price to book ratio is, the higher the IPO underpricing level is.

The last ex ante variable is the market condition. As mentioned in the sixth explanation in Chapter 2, in a bull market, the IPO underpricing is likely to be positively biased. This argument suggests that the better the market condition is before IPO, the higher the IPO underpricing level is.

Besides all the ex ante variables which can be obtained by investors before subscribing the IPO stocks, two ex post variables are very important when analyzing IPO underpricing. One variable is the fluctuation of stock price just after the issue. Standard deviation of post-listed returns is one good proxy measure for IPO firm's ex ante uncertainty. The higher the standard deviation of post-listed returns is, the higher the IPO firm's ex ante uncertainty is. This argument shows that the larger the standard deviation of post-listed return is, the higher the IPO underpricing level is.

This paper uses the standard deviation of daily returns between the close on the first day of trading and the closing on the 15^{th} day of trading.

The other ex post variable is whether the IPO firm will make seasoned equity offering (SEO) in one year after IPO. As mentioned in the second explanation in Chapter 2, if a firm wants to make SEO in one year after IPO, the firm is likely to leave more money on the table in IPO and making its share more popular during SEO. This argument implicates that the firm, which makes seasoned equity offering (SEO) in one year after IPO, will have higher level of underpricing in IPO.

This paper uses the index return during a three-month period prior to each IPO issue. This variable cannot be found in the Prospectus.

4.3 Models and Empirical Results

In this paper, the underpricing level is measured by the percentage difference between the average price of the first one, seven, fifteen trading days' closing prices as well as the three months average closing price and the offer price. We are going to run linear regression to test each model. Owing to incomplete data, our final sample for the regression models contains 47 H-Share firms only.[7]

4.31 Underpricing Level Is Measured by the Percentage Difference Between the First Day's Closing Price and the Offer Price.

[7] In Table 2, the firms with a "*" are the final 47 firms.

There are four models used in this paper to test the relationships between variables and UND. All the variables in the first two models are ex ante variables, which can be obtained by investors before they subscribe the IPO stocks. Investors can use these two models to forecast the IPO underpricing level. The variables in the last two models include ex ante and ex post variables, which cannot be obtained by investor before they subscribe the IPO stocks. These two models are designed to test the explanations for IPO underpricing, not for forecasting.

Model 1a:

$$UND=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$$

Model 1b:

$$UND=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*PB+\beta_5*DP+\beta_6*GRO+\beta_7*US+\varepsilon$$

Model 1c:

$$UND=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$$

Model 1d:

$$UND=\alpha+\beta_1*HSI+\beta_2*IBK2+\beta_3*ACC2+\beta_4*ACC3+\beta_5*DP+\beta_6*GRO+\beta_7*US+\beta_8*ST+\varepsilon$$

where:

UND: Underpricing level of IPO, which is percentage difference between issue price and the first trading days' closing price.

S: Percentage of the whole shares held by Government.

HSI: State of market variable. Percentage change in the Hang Seng Index over three-month period prior to issue.

IBK1: Dummy variable coded 1 if the lead underwriter belongs to the top10 international I-banks; coded 0 otherwise.

IBK2: Dummy variable coded 1 if the lead underwriter is an international I-bank but not the top10; coded 0 otherwise.

ACC1: Dummy variable coded 1 if PricewaterhouseCoopers is the auditing firm; coded 0 otherwise.

ACC2: Dummy variable coded 1 if KPMG is the auditing firm, while coded 0 otherwise.

ACC3: Dummy variable coded 1 if Ernst & Young is the auditing firm, while coded 0 otherwise.

ACC4: Dummy variable coded 1 if Deloitte & Touche is the auditing firm, while coded 0 otherwise.

PB: Issue price divided by net asset per share.

LCA: Money raised in IPO.[8]

LMC: Total market capitalization.[9]

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[8] Money raised in IPO is measured by the product of the issue price and number of share offered. If the issue price provided in Prospectus is a range, we use the middle point of the range as issue price.

[9] Market Capitalization is measured by the product of the issue price and the number of total shares. If the issue price provided in Prospectus is a range, we use the middle point of the range as issue price.

LTA: Total asset.

RANGE: Dummy variable coded 1 if the issue price is a range rather than a fixed price.

DP: Difference of issue price's range, which is the upper issue price limit divided by lower issue price limit.

EPS: Earning per share, which is forecasted earning using the historical growth rate divided by the number of total shares.

EEPS: Expected earning per share, which is underwriter's forecasted earning divided by the number of total shares.

GRO: The geometric mean of the annual growth rates of issuing firm's profit in 3 years prior to issue.

EGRO: Underwriter's forecasted profit divided by profit in last year prior to issue.

US: Dummy variable coded 1 if issuer lists H share in Hong Kong and America simultaneously.

ST: Standard deviation of daily returns between the close in the first day of trading and the closing in the 15^{th} day of trading.

SEO: Dummy variable coded 1 if issuer makes seasoned equity offering (SEO) in one year after IPO.

Table 3

Results of Model 1a, Model 1b, Model 1c and Model 1d.[10]

The dependent variable is UND, which is percentage difference between issue price and the first trading day's closing price.

	Model 1a		Model 1b		Model 1c		Model 1d	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	2.5976	1.5267	1.5795	3.0941	2.2258	1.2539	1.5874	3.2078
S	-0.2985	-0.5005			-0.1788	-0.2988		
HIS	1.2098	2.1414**	0.9865	2.4102**	1.0140	1.7618*	0.9873	2.3880**
IBK1	-0.0943	-0.3527			-0.0823	-0.2922		
IBK2	-0.2276	-1.0115			-0.1940	-0.8346	-0.1247	-1.1204
ACC1	-0.1043	-0.3102			-0.0612	-0.1757		
ACC2	-0.3980	-1.0239	-0.2275	-1.3270	-0.2849	-0.7198	-0.1920	-1.1206
ACC3	0.2471	0.6849	0.4087	2.8700***	0.3761	1.0047	0.4501	3.1443***
ACC4	-0.1583	-0.3880			-0.1353	-0.3274		
PB	0.0184	0.0822	0.1286	1.2407	0.0004	0.0017		
LCA	-0.0269	-0.0583			-0.0539	-0.1120		
LMC	-0.0353	-0.0806			-0.0608	-0.1337		
LTA	0.0399	0.3190			0.0658	0.5230		
RANGE	0.1313	0.4299			0.2197	0.7087		
DP	-1.8996	-1.5434	-1.3757	-2.9102***	-1.8879	-1.4766	-1.2850	-2.9740***
EPS	-0.4263	-0.4382			0.3222	0.2974		
EEPS	0.3611	0.4105			-0.2279	-0.2365		
GRO	-0.0773	-1.3604	-0.1000	-2.4006**	-0.0937	-1.6275	-0.0991	-2.4368**
EGRO	-0.0545	-0.5409			-0.0080	-0.0763		
US	0.3275	1.3827	0.3444	2.1485**	0.3489	1.2762	0.3416	1.9840*
ST					0.8920	1.5434	0.6741	1.8709*
SEO					0.0304	0.1787		
R-squared	0.4765		0.4097		0.5224		0.4589	
Adjusted R-squared	0.1082		0.3038		0.1213		0.3449	
S.E. of regression	0.3957		0.3496		0.3927		0.3391	

*** Indicates statistical significant at the 0.01 level.

** Indicates statistical significant at the 0.05 level.

* Indicates statistical significant at the 0.10 level.

[10] Appendix 1 provides results for each model.

Test results are provided in Table 3. The relationship between HSI and IPO underpricing level is significant at the 0.05 level in Model 1a, Model 1b and Model 1d and significant at the 0.10 level in Model 1c. The coefficient of HSI is positive. That means, in a bull market, the IPO underpricing is likely to be positively biased. Thus, this paper concludes that the better the market condition before IPO is, the higher the IPO underpricing level is.

The relationship between ACC3 and IPO underpricing level is significant at the 0.01 level in Model 1b and Model 1d. The coefficient of ACC3 is positive. This suggests that if an IPO firm hires Ernst & Young, which has small market share in auditing H share's IPO, as its auditing firm, the IPO underpricing will be high.

The relationship between DP and IPO underpricing level is significant at the 0.05 level in model 1b and significant at the 0.10 level in model 1a and model 1c. The coefficient of DP is negative. It is reasonable, because when the issue price is a range, the investment bank has a chance to adjust the issue price after gaining more information about investors' preference in the road show. More information gained by investment banks can lead to more accurate IPO pricing and lower underpricing level. That means the larger the range of issue price is, the lower the IPO underpricing level is.

The relationship between GRO and IPO underpricing level is much more

significant than the relationship between EGRO and IPO underpricing level. That means the forecasted earning provided by underwriter is unable to forecast the IPO underpricing level, which is defined as UND15. The relationship between GRO and IPO underpricing level is significant at the 0.05 in Model 1c and significant at the 0.10 in Model 1b. The coefficient of GRO is negative. This is because when the growing opportunity of an IPO firm is higher, the IPO stocks are more attractive to investors, which gives the investment banks a chance to set the issue price higher. This leads to lower IPO underpricing level. Thus, the higher the historical profit growth rate is, the lower the IPO underpricing level is.

The relationship between US and IPO underpricing level is significant at the 0.05 in Model 1b and significant at the 0.10 level in Model 1d. This suggests that if the IPO firm lists H share in Hong Kong and American stock markets simultaneously, the IPO underpricing level will be higher.

The relationship between ST and IPO underpricing level is significant at the 0.10 level in Model 1d. The coefficient of ST is positive. That means the higher the standard deviation of post-listed returns is, the higher the IPO firm's ex ante uncertainty is. The higher the IPO firm's ex ante uncertainty is, the higher the underpricing level is.

The results also tell us all proxies for firm's size are insignificant to IPO

underpricing level for H share, even though in most literatures there is a significant relationship between firm's size and IPO underpricing level.

As mentioned before, in many studies, underpricing level can be measured by the percentage difference between the first trading day's closing price and the offer price, the percentage difference between the average price of the first five trading days' closing prices, the offer price or the percentage difference between the first seven days' closing prices and the offer price, etc. This paper will also define the underpricing level as the percentage difference between the first trading day's closing price and the offer price, the percentage difference between the average price of the first seven trading days' closing prices and the offer price, as well as the percentage difference between the three months' closing prices and the offer price.

4.32 Underpricing Level Is Measured by the Percentage Difference Between the Average Price of the First Fifteen Trading Days' Closing Prices and the Offer Price.

There are four models used in this paper to test the relationships between variables and UND15. All the variables in the first two models are ex ante variables, which can be obtained by investors before they subscribe the IPO stocks. Investors can use these two models to forecast the IPO underpricing level. The variables in the last two models include ex ante and ex post variables, which cannot be obtained

by investor before they subscribe the IPO stocks. These two models are designed to test the explanations for IPO underpricing, not for forecasting.

Model 2a:

$$UND15=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$$

Model 2b:

$$UND15=\alpha+\beta_1*HSI+\beta_2*ACC3+\beta_3*PB+\beta_4*DP+\beta_5*GRO+\beta_6*US+\varepsilon$$

Model 2c:

$$UND15=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$$

Model 2d:

$$UND15=\alpha+\beta_1*HSI+\beta_2*IBK1+\beta_3*ACC2+\beta_4*ACC3+\beta_5*DP+\beta_6*GRO+\beta_7*US+\beta_8*ST+\beta_9*SEO+\varepsilon$$

where:

UND15: Underpricing level of IPO, which is percentage difference between issue price and the average price of the first fifteen trading days' closing prices.

Table 4

Results of Model 2a, Model 2b, Model 2c and Model 2d.[11]

The dependent variable is UND15, which is percentage difference between issue price and the average price of the first fifteen trading days' close prices.

	Model 2a		Model 2b		Model 2c		Model 2d	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.7763	1.0465	1.5934	3.1664	1.0158	0.5774	1.2710	2.4543
S	-0.1602	-0.2693			-0.0143	-0.0242		
HIS	1.1757	2.0859**	1.0169	2.6564**	0.9740	1.7075	1.0333	2.5892**
IBK1	-0.0010	-0.0037			0.0914	0.3271	0.0981	0.7770
IBK2	-0.0569	-0.2535			0.0260	0.1126		
ACC1	-0.1128	-0.3364			0.0084	0.0244		
ACC2	-0.3592	-0.9262			-0.2142	-0.5462	-0.1915	-1.134
ACC3	0.2677	0.7438	0.4442	3.3076***	0.4453	1.2001	0.4199	2.9679***
ACC4	-0.1466	-0.3603			-0.0565	-0.1380		
PB	0.1924	0.8618	0.2046	2.0028*	0.1800	0.8163		
LCA	-0.0167	-0.0363			-0.1663	-0.3488		
LMC	-0.0668	-0.1531			0.0256	0.0568		
LTA	0.0767	0.6140			0.0910	0.7298		
RANGE	0.0959	0.3147			0.1488	0.4843		
DP	-1.8780	-1.5295	-1.5013	-3.2146***	-1.5420	-1.2168	-1.1375	-2.5534**
EPS	-0.4884	-0.5032			0.2675	0.2491		
EEPS	0.1928	0.2197			-0.4695	-0.4914		
GRO	-0.0805	-1.4200	-0.1065	-2.6020**	-0.0990	-1.7357*	-0.1116	-2.7569***
EGRO	-0.0163	-0.1616			0.0134	0.1283		
US	0.2986	1.2637	0.2785	1.7941*	0.1981	0.7311	0.2199	1.0864
ST					0.7613	1.3291	0.7502	2.1086**
SEO					0.1734	1.0286	0.1968	1.6255
R-squared	0.4859		0.4167		0.5371		0.4939	
Adjusted R-squared	0.1241		0.3292		0.1482		0.3709	
S.E. of regression	0.3947		0.3454		0.3892		0.3345	

*** Indicates statistical significant at the 0.01 level.

** Indicates statistical significant at the 0.05 level.

* Indicates statistical significant at the 0.10 level.

[11] Appendix 1 provides results for each model.

Test results are provided in table 4. They are very similar to the test results provided in table 3. The relationship between HSI and IPO underpricing level is significant at the 0.05 level in Model 2a, Model 2b and Model 2d. The coefficient of HSI is positive. That means the better the market condition is before IPO, the higher the IPO underpricing level is.

The relationship between ACC3 and IPO underpricing level is significant at the 0.01 level in Model 2b and Model 2d. The coefficient of ACC3 is positive. This suggests that if an IPO firm hires Ernst & Young, which has small market share in auditing H share's IPO, as its auditing firm, the IPO underpricing will be high.

The relationship between DP and IPO underpricing level is significant at the 0.01 level in Model 2b and significant at the 0.05 level in Model 2d. The coefficient of DP is negative. That means the larger the range of issue price is, the lower the IPO underpricing level is.

The relationship between GRO and IPO underpricing level is much more significant than the relationship between EGRO and IPO underpricing level. That means the forecasted earning provided by underwriter is kind of useless when investors forecast the IPO underpricing level, which is defined as UND. The relationship between GRO and IPO underpricing level is significant at the 0.01 in model 2d and significant at the 0.05 in model 2b. The coefficient of GRO is

negative. That means the higher the historical profit growth rate is, the lower the IPO underpricing level is.

The relationship between US and IPO underpricing level is significant at the 0.10 in Model 2b. This suggests that if the IPO firm lists H share in Hong Kong and American stock markets simultaneously, the IPO underpricing level will be higher.

The relationships between other variables and UND are not significant.

4.33 Underpricing Level Is Measured by the Percentage Difference Between the Average Price of the First Seven Trading Days' Closing Prices and the Offer Price.

There are four models used in this paper to test the relationships between variables and UND7. All the variables in the first two models are ex ante variables, which can be obtained by investors before they subscribe the IPO stocks. Investors can use these two models to forecast the IPO underpricing level. The variables in the last two models include ex ante and ex post variables, which cannot be obtained by investor before they subscribe the IPO stocks. These two models are designed to test the explanations for IPO underpricing, not for forecasting.

Model 3a:

$$UND7=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*AC$$

$$C4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+$$

$$\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$$

Model 3b:

$$UND7=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*PB+\beta_5*DP+\beta_6*GRO+\beta_7*US+\varepsilon$$

Model 3c:

$$UND7=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*AC$$

$$C4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+$$

$$\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$$

Model 3d:

$$UND7=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*DP+\beta_5*GRO+\beta_6*US+\beta_7*ST+\beta_8*SEO+\varepsilon$$

where:

UND7: Underpricing level of IPO, which is percentage difference between issue price and the average price of the first seven trading days' close prices.

Table 5

Results of Model 3a, Model 3b, Model 3c and Model 3d.[12]

The dependent variable is UND7, which is percentage difference between issue price and the average price of the first seven trading days' close prices.

	Model3a		Model3b		Model3c		Model3d	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.8784	1.1173	1.5983	3.1971	1.3195	0.7501	1.3359	2.5855
S	-0.0271	-0.0460			0.1014	0.1710		
HIS	1.1904	2.1323**	1.0977	2.7385***	0.9992	1.7517*	0.9288	2.3299**
IBK1	-0.0407	-0.1539			0.0125	0.0448		
IBK2	-0.1258	-0.5659			-0.0680	-0.2951		
ACC1	-0.1160	-0.3493			-0.0341	-0.0989		
ACC2	-0.3982	-1.0367	-0.2311	-1.3764	-0.2730	-0.6960	-0.1968	-1.1592
ACC3	0.2684	0.7529	0.4127	2.9594***	0.4175	1.1253	0.4429	3.1091***
ACC4	-0.1917	-0.4755			-0.1348	-0.3292		
PB	0.1761	0.7964	0.1751	1.7246*	0.1617	0.7334		
LCA	-0.1201	-0.2633			-0.2096	-0.4397		
LMC	-0.0020	-0.0045			0.0347	0.0770		
LTA	0.0685	0.5535			0.0874	0.7003		
RANGE	0.1049	0.3475			0.1714	0.5579		
DP	-1.6949	-1.3937	-1.4603	-3.1543***	-1.5154	-1.1959	-1.1496	-2.5641**
EPS	-0.4852	-0.5048			0.2376	0.2213		
EEPS	0.2270	0.2611			-0.3769	-0.3945		
GRO	-0.0742	-1.3204	-0.0979	-2.3987**	-0.0910	-1.5948	-0.1081	-2.6542**
EGRO	-0.0202	-0.2025			0.0158	0.1508		
US	0.3079	1.3156	0.3327	2.1196**	0.2652	0.9789	0.3278	1.9304*
ST					0.7891	1.3776	0.6899	1.9299*
SEO					0.1033	0.6132	0.1342	1.1773
R-squared	0.4925		0.4379		0.5342		0.469648	
Adjusted R-squared	0.1354		0.3370		0.1430		0.357995	
S.E. of regression	0.3909		0.3423		0.3892		0.336888	

*** Indicates statistical significant at the 0.01 level.

** Indicates statistical significant at the 0.05 level.

* Indicates statistical significant at the 0.10 level.

[12] Appendix 1 provides results for each model.

Test results are provided in Table 5. They are very similar to the test results provided in Table 3. The relationship between HSI and IPO underpricing level is significant at the 0.01 level in Model 3b, significant at the 0.05 level in Model 3a and Model 3d and significant at the 0.10 level in Model 3c. The coefficient of HSI is positive. That means the better the market condition is before IPO, the higher the IPO underpricing level is.

The relationship between ACC3 and IPO underpricing level is significant at the 0.01 level in Model 3b and Model 3d. The coefficient of ACC3 is positive. This suggests that if an IPO firm hires Ernst & Young, which has small market share in auditing H share's IPO, as its auditing firm, the IPO underpricing will be high.

The relationship between DP and IPO underpricing level is significant at the 0.01 level in Model 3b and significant at the 0.05 level in Model 3d. The coefficient of DP is negative. That means the larger the range of issue price is, the lower the IPO underpricing level is.

The relationship between GRO and IPO underpricing level is much more significant than the relationship between EGRO and IPO underpricing level. That means the forecasted earning provided by underwriter is kind of useless when investors forecast the IPO underpricing level, which is defined as UND7. The relationship between GRO and IPO underpricing level is significant at the 0.05 in

Model 3b and Model 3d. The coefficient of GRO is negative. That means the higher the historical profit growth rate is, the lower the IPO underpricing level is.

The relationship between US and IPO underpricing level is significant at the 0.05 in Model 3b and significant at the 0.10 in Model 3d. This suggests that if the IPO firm lists H share in Hong Kong and American stock markets simultaneously, the IPO underpricing level will be higher.

The relationships between other variables and UND7 are not significant.

4.34 Underpricing Level Is Measured by the Percentage Difference Between the Average Price of the First Three Months' Closing Prices and the Offer Price.

There are four models used in this paper to test the relationships between variables and UND3M. All the variables in the first two models are ex ante variables, which can be obtained by investors before they subscribe the IPO stocks. Investors can use these two models to forecast the IPO underpricing level. The variables in the last two models include ex ante and ex post variables, which cannot be obtained by investor before they subscribe the IPO stocks. These two models are designed to test the explanations for IPO underpricing, not for forecasting.

Model 4a:

$$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$$

Model 4b:

$$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*PB+\beta_4*LAC+\beta_5*LMC+\beta_6*LTA+\beta_7*DP+\beta_8*EGRO+\varepsilon$$

Model 4c:

$$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$$

Model 4d:

$$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*PB+\beta_4*LAC+\beta_5*LMC+\beta_6*LTA+\beta_7*DP+\beta_8*EGRO+\varepsilon$$

where:

UND3M: Underpricing level of IPO, which is percentage difference between issue price and the average price of the first three months' close prices.

Table 6

Results of Model 4a, Model 4b, Model 4c and Model 4d.[13]

The dependent variable is UND3M, which is percentage difference between issue price and the average price of the first three months' close prices.

	Model4a		Model4b		Model4c		Model4d	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.8914	-0.6643	0.0213	0.0328	-1.6960	-1.2411	0.0213	0.0328
S	-0.7330	-1.5588	-0.7146	-1.9506*	-0.6135	-1.3316	-0.7146	-1.9506*
HSI	0.8704	1.9536*	0.8470	2.6768**	0.7270	1.6409	0.8470	2.6768**
IBK1	-0.0706	-0.3348			0.0510	0.2350		
IBK2	-0.1008	-0.5682			-0.0082	-0.0457		
ACC1	0.0322	0.1213			0.1720	0.6419		
ACC2	-0.0642	-0.2093			0.0588	0.1929		
ACC3	0.1129	0.3966			0.2703	0.9380		
ACC4	0.1266	0.3935			0.2371	0.7456		
PB	0.2225	1.2608	0.1704	1.5439	0.2180	1.2727	0.1704	1.5439
LCA	0.3923	1.0772	0.4680	1.7834*	0.2009	0.5424	0.4680	1.7834*
LMC	-0.4330	-1.2547	-0.4773	-1.9092*	-0.2843	-0.8120	-0.4773	-1.9092*
LTA	0.2065	2.0908**	0.1673	2.2559**	0.2081	2.1474**	0.1673	2.2559**
RANGE	-0.1091	-0.4530			-0.0981	-0.4110		
DP	-1.1716	-1.2070	-1.6748	-3.9663***	-0.7063	-0.7176	-1.6748	-3.9663***
EPS	0.4455	0.5807			0.9725	1.1660		
EEPS	-0.5367	-0.7735			-1.0466	-1.4103		
GRO	-0.0147	-0.3269			-0.0290	-0.6535		
EGRO	0.1821	2.2906**	0.1533	2.9390***	0.1905	2.3464**	0.1533	2.9390***
US	-0.0901	-0.4826			-0.2472	-1.1746		
ST					0.4315	0.9698		
SEO					0.2225	1.6998		
R-squared	0.5553		0.4920		0.6134		0.4920	
Adjusted R-squared	0.2423		0.3851		0.2886		0.3851	
S.E. of regression	0.3120		0.2811		0.3023		0.2811	

*** Indicates statistical significant at the 0.01 level.

** Indicates statistical significant at the 0.05 level.

* Indicates statistical significant at the 0.10 level.

[13] Appendix 1 provides results for each model.

Test results are provided in Table 6. The relationship between HSI and IPO underpricing level is significant at the 0.05 level in Model 4b and Model 4d and significant at the 0.10 level in Model 4a. The coefficient of HSI is positive. That means the better the market condition is before IPO, the higher the IPO underpricing level is.

The relationship between DP and IPO underpricing level is significant at the 0.01 level in Model 4b and Model 4d. The coefficient of DP is negative. That means the larger the range of issue price is, the lower the IPO underpricing level is.

The relationship between EGRO and IPO underpricing level is much more significant than the relationship between GRO and IPO underpricing level. That means the forecasted earning provided by underwriter is useful when investors forecast the IPO underpricing level, which is defined as UND3M. This is a main difference between model 4 and other models. That means underwriter's forecasted profit is more useful in a longer period of time. The relationship between EGRO and IPO underpricing level is significant at the 0.01 level in Model 4b and Model 4d and significant at the 0.05 level in Model 4a and Model 4c. The coefficient of GRO is positive. That means the higher the forecasted profit growth rate is, the higher the IPO underpricing level is.

The relationship between LTA and IPO underpricing level is significant at the

0.05 level in Model 4a, Model 4b, Model 4c and Model 4d. The coefficient of LTA is positive. That implies the bigger the firm's size is, the higher the IPO underpricing level is.

The relationships between other variables and UND3M are not significant.

CHAPTER 7:

Conclusion

Firstly, this paper reviews five potential explanations for worldwide IPO underpricing. These explanations include incentives of investment bankers, a dynamic strategy employed by issuing firms to overcome the asymmetry of information between issuing firms and outside investors, uncertainty surrounding the post-issue value, reporting accountant/auditor firms' reputations, and the market condition. In addition to the existing theory, this paper provides four new explanations for worldwide IPO underpricing. These four explanations include the historical growth rate of the issuing firm, the expected growth rate of the issuing firm, the range of the IPO issue price provided in the Prospectus and the cross-border listing effect.

Furthermore, we investigate a *combination* case—H share companies, which are companies incorporated in the People's Republic of China and approved by the China Securities Regulatory Commission for a listing in Hong Kong. We investigate 76 H share firms[14] and find that the average IPO underpricing level of H shares is about 16.8%, which is much closer to the level in developed countries rather than in China.

Finally, this paper provides potential explanations of H share's IPO underpricing.

[14] In Appendix 2, we provide graphs for each sample firm to illustrate the price movement in a three-month window just after the issue.

When defining the IPO underpricing level as the percentage difference between the first trading day's closing price and the offer price, the percentage difference between the average price of the first seven trading days' closing prices, the offer price or the percentage difference between the first fifteen days' closing prices and the offer price, we discover similar relationships. The better the market condition is before the IPO, the higher the IPO underpricing level is; the larger the range of issue price is, the lower the IPO underpricing level is; the higher the historical profit growth rate is, the lower the IPO underpricing level is; the firms, which list IPO share in Hong Kong and America stock markets simultaneously, will have higher level of underpricing in IPO; if an IPO firm hires Ernst & Young, the IPO underprcing level will be high. Besides, we also find the forecasted earning provided by underwriters and all proxies for firm's size are insignificant to IPO underpricing level for H share, even though in most literatures there is a significant relationship between firm's size and IPO underpricing level.

When defining the IPO underpricing level as the percentage difference between the first three months' closing prices and the offer price, the results are slightly different. In this case, we find that the better the market condition is before IPO, the higher the IPO underpricing level is; the larger the range of issue price is, the lower the IPO underpricing level is; the higher the expected profit growth rate is, the higher the IPO underpricing level is. EGRO is useful this time, while GRO is useless. Besides, LCA, LMC and LTA are significant, but the sign is uncertain.

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Appendix 1:

Detailed Regression Results for Model 1a, Model 1b, Model 1c, Model 1d, Model 2a, Model2b, Model 2c, Model 2d, Model 3a, Model 3b, Model 3c, Model 3d, Model 4a, Model 4b, Model 4c and Model 4d.

Model 1a:

Dependent Variable: UND				
Method: Least Squares				
Included observations: 47				
$UND=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.5976	1.7015	1.5267	0.1385
S	-0.2985	0.5963	-0.5005	0.6207
HSI	1.2098	0.5650	2.1414	0.0414
IBK1	-0.0943	0.2674	-0.3527	0.7271
IBK2	-0.2276	0.2250	-1.0115	0.3208
ACC1	-0.1043	0.3361	-0.3102	0.7588
ACC2	-0.3980	0.3887	-1.0239	0.3150
ACC3	0.2471	0.3608	0.6849	0.4992
ACC4	-0.1583	0.4079	-0.3880	0.7011
PB	0.0184	0.2238	0.0822	0.9351
LCA	-0.0269	0.4618	-0.0583	0.9540
LMC	-0.0353	0.4376	-0.0806	0.9364
LTA	0.0399	0.1252	0.3190	0.7522
RANGE	0.1313	0.3054	0.4299	0.6707
DP	-1.8996	1.2308	-1.5434	0.1344
EPS	-0.4263	0.9728	-0.4382	0.6647
EEPS	0.3611	0.8797	0.4105	0.6847
GRO	-0.0773	0.0569	-1.3604	0.1849
EGRO	-0.0545	0.1008	-0.5409	0.5930
US	0.3275	0.2368	1.3827	0.1781
R-squared	0.4765	Mean dependent var		0.1856
Adjusted R-squared	0.1082	S.D. dependent var		0.4190
S.E. of regression	0.3957	Akaike info criterion		1.2802
Sum squared resid	4.2266	F-statistic		1.2937
Log likelihood	-10.0846	Prob(F-statistic)		0.2644

Model 1b:

Dependent Variable: UND				
Method: Least Squares				
Included observations: 47				
$UND=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*PB+\beta_5*DP+\beta_6*GRO+\beta_7*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.5795	0.5105	3.0941	0.0036
HSI	0.9865	0.4093	2.4102	0.0208
ACC2	-0.2275	0.1714	-1.3270	0.1922
ACC3	0.4087	0.1424	2.8700	0.0066
PB	0.1286	0.1037	1.2407	0.2221
DP	-1.3757	0.4727	-2.9102	0.0059
GRO	-0.1000	0.0417	-2.4006	0.0212
US	0.3444	0.1603	2.1485	0.0379
R-squared	0.4097	Mean dependent var		0.1856
Adjusted R-squared	0.3038	S.D. dependent var		0.4190
S.E. of regression	0.3496	Akaike info criterion		0.8897
Sum squared resid	4.7660	F-statistic		3.8675
Log likelihood	-12.9072	Prob(F-statistic)		0.0028

Model 1c:

Dependent Variable: UND				
Method: Least Squares				
Included observations: 47				
$UND=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.2258	1.7751	1.2539	0.2215
S	-0.1788	0.5984	-0.2988	0.7676
HSI	1.0140	0.5755	1.7618	0.0903
IBK1	-0.0823	0.2818	-0.2922	0.7726
IBK2	-0.1940	0.2325	-0.8346	0.4119
ACC1	-0.0612	0.3481	-0.1757	0.8619
ACC2	-0.2849	0.3958	-0.7198	0.4783
ACC3	0.3761	0.3744	1.0047	0.3247
ACC4	-0.1353	0.4131	-0.3274	0.7461
PB	0.0004	0.2225	0.0017	0.9986
LCA	-0.0539	0.4810	-0.1120	0.9117
LMC	-0.0608	0.4549	-0.1337	0.8947
LTA	0.0658	0.1259	0.5230	0.6056
RANGE	0.2197	0.3101	0.7087	0.4851
DP	-1.8879	1.2786	-1.4766	0.1523
EPS	0.3222	1.0834	0.2974	0.7686
EEPS	-0.2279	0.9640	-0.2365	0.8150
GRO	-0.0937	0.0576	-1.6275	0.1162
EGRO	-0.0080	0.1055	-0.0763	0.9398
US	0.3489	0.2734	1.2762	0.2136
ST	0.8920	0.5779	1.5434	0.1353
SEO	0.0304	0.1700	0.1787	0.8596

R-squared	0.5224	Mean dependent var	0.1856
Adjusted R-squared	0.1213	S.D. dependent var	0.4190
S.E. of regression	0.3927	Akaike info criterion	1.2735
Sum squared resid	3.8560	F-statistic	1.3024
Log likelihood	-7.9279	Prob(F-statistic)	0.2617

Model 1d:

Dependent Variable: UND				
Method: Least Squares				
Included observations: 47				
$UND=\alpha+\beta_1*HSI+\beta_2*IBK2+\beta_3*ACC2+\beta_4*ACC3+\beta_5*DP+\beta_6*GRO+\beta_7*US+\beta_8*ST+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.5874	0.4949	3.2078	0.0027
HSI	0.9873	0.4135	2.3880	0.0220
IBK2	-0.1247	0.1113	-1.1204	0.2696
ACC2	-0.1920	0.1713	-1.1206	0.2695
ACC3	0.4501	0.1432	3.1443	0.0032
DP	-1.2850	0.4321	-2.9740	0.0051
GRO	-0.0991	0.0407	-2.4368	0.0196
US	0.3416	0.1722	1.9840	0.0545
ST	0.6741	0.3603	1.8709	0.0691
R-squared	0.4589	Mean dependent var		0.1856
Adjusted R-squared	0.3449	S.D. dependent var		0.4190
S.E. of regression	0.3391	Akaike info criterion		0.8453
Sum squared resid	4.3694	F-statistic		4.0277
Log likelihood	-10.8655	Prob(F-statistic)		0.0015

Model 2a:

Dependent Variable: UND15				
Method: Least Squares				
Included observations: 47				
$UND15=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.7763	1.6974	1.0465	0.3046
S	-0.1602	0.5948	-0.2693	0.7898
HSI	1.1757	0.5636	2.0859	0.0466
IBK1	-0.0010	0.2667	-0.0037	0.9971
IBK2	-0.0569	0.2245	-0.2535	0.8018
ACC1	-0.1128	0.3353	-0.3364	0.7392
ACC2	-0.3592	0.3878	-0.9262	0.3625
ACC3	0.2677	0.3600	0.7438	0.4634
ACC4	-0.1466	0.4070	-0.3603	0.7214
PB	0.1924	0.2233	0.8618	0.3964
LCA	-0.0167	0.4607	-0.0363	0.9713
LMC	-0.0668	0.4366	-0.1531	0.8795
LTA	0.0767	0.1249	0.6140	0.5443
RANGE	0.0959	0.3047	0.3147	0.7554
DP	-1.8780	1.2279	-1.5295	0.1378
EPS	-0.4884	0.9704	-0.5032	0.6189
EEPS	0.1928	0.8776	0.2197	0.8277
GRO	-0.0805	0.0567	-1.4200	0.1671
EGRO	-0.0163	0.1006	-0.1616	0.8728
US	0.2986	0.2363	1.2637	0.2172

R-squared	0.4859	Mean dependent var	0.1898
Adjusted R-squared	0.1241	S.D. dependent var	0.4217
S.E. of regression	0.3947	Akaike info criterion	1.2754
Sum squared resid	4.2064	F-statistic	1.3429
Log likelihood	-9.9721	Prob(F-statistic)	0.2364

Model 2b:

Dependent Variable: UND15				
Method: Least Squares				
Included observations: 47				
$UND15=\alpha+\beta_1*HSI+\beta_2*ACC3+\beta_3*PB+\beta_4*DP+\beta_5*GRO+\beta_6*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.5934	0.5032	3.1664	0.0030
HSI	1.0169	0.3828	2.6564	0.0113
ACC3	0.4442	0.1343	3.3076	0.0020
PB	0.2046	0.1022	2.0028	0.0520
DP	-1.5013	0.4670	-3.2146	0.0026
GRO	-0.1065	0.0409	-2.6020	0.0129
US	0.2785	0.1552	1.7941	0.0804
R-squared	0.4167	Mean dependent var		0.1898
Adjusted R-squared	0.3292	S.D. dependent var		0.4217
S.E. of regression	0.3454	Akaike info criterion		0.8484
Sum squared resid	4.7722	F-statistic		4.7627
Log likelihood	-12.9376	Prob(F-statistic)		0.0010

Model 2c:

Dependent Variable: UND15				
Method: Least Squares				
Included observations: 47				
$UND15=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.0158	1.7593	0.5774	0.5689
S	-0.0143	0.5931	-0.0242	0.9809
HSI	0.9740	0.5704	1.7075	0.1001
IBK1	0.0914	0.2793	0.3271	0.7463
IBK2	0.0260	0.2304	0.1126	0.9112
ACC1	0.0084	0.3450	0.0244	0.9808
ACC2	-0.2142	0.3922	-0.5462	0.5898
ACC3	0.4453	0.3710	1.2001	0.2414
ACC4	-0.0565	0.4094	-0.1380	0.8913
PB	0.1800	0.2205	0.8163	0.4220
LCA	-0.1663	0.4768	-0.3488	0.7302
LMC	0.0256	0.4508	0.0568	0.9552
LTA	0.0910	0.1247	0.7298	0.4723
RANGE	0.1488	0.3073	0.4843	0.6324
DP	-1.5420	1.2672	-1.2168	0.2350
EPS	0.2675	1.0737	0.2491	0.8053
EEPS	-0.4695	0.9554	-0.4914	0.6274
GRO	-0.0990	0.0571	-1.7357	0.0949
EGRO	0.0134	0.1045	0.1283	0.8989
US	0.1981	0.2709	0.7311	0.4715
ST	0.7613	0.5728	1.3291	0.1958
SEO	0.1734	0.1685	1.0286	0.3135

R-squared	0.5371	Mean dependent var	0.1898
Adjusted R-squared	0.1482	S.D. dependent var	0.4217
S.E. of regression	0.3892	Akaike info criterion	1.2556
Sum squared resid	3.7876	F-statistic	1.3810
Log likelihood	-7.5075	Prob(F-statistic)	0.2186

Model 2d:

Dependent Variable: UND15				
Method: Least Squares				
Included observations: 47				
$UND15=\alpha+\beta_1*HSI+\beta_2*IBK1+\beta_3*ACC2+\beta_4*ACC3+\beta_5*DP+\beta_6*GRO+\beta_7*US+\beta_8*ST+\beta_9*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.2710	0.5179	2.4543	0.0189
HSI	1.0333	0.3991	2.5892	0.0137
IBK1	0.0981	0.1263	0.7770	0.4421
ACC2	-0.1915	0.1689	-1.1340	0.2641
ACC3	0.4199	0.1415	2.9679	0.0052
DP	-1.1375	0.4455	-2.5534	0.0149
GRO	-0.1116	0.0405	-2.7569	0.0090
US	0.2199	0.2024	1.0864	0.2843
ST	0.7502	0.3558	2.1086	0.0418
SEO	0.1968	0.1211	1.6255	0.1126
R-squared	0.4939	Mean dependent var		0.1898
Adjusted R-squared	0.3709	S.D. dependent var		0.4217
S.E. of regression	0.3345	Akaike info criterion		0.8340
Sum squared resid	4.1403	F-statistic		4.0128
Log likelihood	-9.5995	Prob(F-statistic)		0.0012

Model 3a:

Dependent Variable: UND7				
Method: Least Squares				
Included observations: 47				
$UND7=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.8784	1.6812	1.1173	0.2737
S	-0.0271	0.5892	-0.0460	0.9637
HSI	1.1904	0.5582	2.1323	0.0422
IBK1	-0.0407	0.2642	-0.1539	0.8788
IBK2	-0.1258	0.2223	-0.5659	0.5762
ACC1	-0.1160	0.3321	-0.3493	0.7296
ACC2	-0.3982	0.3841	-1.0367	0.3091
ACC3	0.2684	0.3565	0.7529	0.4580
ACC4	-0.1917	0.4031	-0.4755	0.6382
PB	0.1761	0.2212	0.7964	0.4327
LCA	-0.1201	0.4563	-0.2633	0.7944
LMC	-0.0020	0.4324	-0.0045	0.9964
LTA	0.0685	0.1237	0.5535	0.5845
RANGE	0.1049	0.3018	0.3475	0.7309
DP	-1.6949	1.2162	-1.3937	0.1748
EPS	-0.4852	0.9612	-0.5048	0.6178
EEPS	0.2270	0.8693	0.2611	0.7960
GRO	-0.0742	0.0562	-1.3204	0.1978
EGRO	-0.0202	0.0996	-0.2025	0.8410
US	0.3079	0.2340	1.3156	0.1994

R-squared	0.4925	Mean dependent var	0.1855
Adjusted R-squared	0.1354	S.D. dependent var	0.4205
S.E. of regression	0.3909	Akaike info criterion	1.2563
Sum squared resid	4.1266	F-statistic	1.3793
Log likelihood	-9.5219	Prob(F-statistic)	0.2174

Model 3b:

Dependent Variable: UND7				
Method: Least Squares				
Included observations: 47				
$UND7=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*PB+\beta_5*DP+\beta_6*GRO+\beta_7*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.5983	0.4999	3.1971	0.0028
HIS	1.0977	0.4008	2.7385	0.0093
ACC2	-0.2311	0.1679	-1.3764	0.1765
ACC3	0.4127	0.1395	2.9594	0.0052
PB	0.1751	0.1015	1.7246	0.0925
DP	-1.4603	0.4630	-3.1543	0.0031
GRO	-0.0979	0.0408	-2.3987	0.0213
US	0.3327	0.1570	2.1196	0.0405
R-squared	0.4379	Mean dependent var		0.1855
Adjusted R-squared	0.3370	S.D. dependent var		0.4205
S.E. of regression	0.3423	Akaike info criterion		0.8478
Sum squared resid	4.5708	F-statistic		4.3407
Log likelihood	-11.9242	Prob(F-statistic)		0.0012

Model 3c:

Dependent Variable: UND7				
Method: Least Squares				
Included observations: 47				
$UND7=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.3195	1.7593	0.7501	0.4602
S	0.1014	0.5931	0.1710	0.8656
HSI	0.9992	0.5704	1.7517	0.0921
IBK1	0.0125	0.2793	0.0448	0.9646
IBK2	-0.0680	0.2304	-0.2951	0.7704
ACC1	-0.0341	0.3450	-0.0989	0.9220
ACC2	-0.2730	0.3922	-0.6960	0.4928
ACC3	0.4175	0.3710	1.1253	0.2711
ACC4	-0.1348	0.4094	-0.3292	0.7448
PB	0.1617	0.2205	0.7334	0.4702
LCA	-0.2096	0.4768	-0.4397	0.6640
LMC	0.0347	0.4508	0.0770	0.9393
LTA	0.0874	0.1247	0.7003	0.4902
RANGE	0.1714	0.3073	0.5579	0.5819
DP	-1.5154	1.2672	-1.1959	0.2430
EPS	0.2376	1.0737	0.2213	0.8267
EEPS	-0.3769	0.9554	-0.3945	0.6966
GRO	-0.0910	0.0571	-1.5948	0.1233
EGRO	0.0158	0.1045	0.1508	0.8813
US	0.2652	0.2709	0.9789	0.3370
ST	0.7891	0.5728	1.3776	0.1805
SEO	0.1033	0.1685	0.6132	0.5453

R-squared	0.5342	Mean dependent var	0.1855
Adjusted R-squared	0.1430	S.D. dependent var	0.4205
S.E. of regression	0.3892	Akaike info criterion	1.2557
Sum squared resid	3.7877	F-statistic	1.3654
Log likelihood	-7.5080	Prob(F-statistic)	0.2266

Model 3d:

Dependent Variable: UND7				
Method: Least Squares				
Included observations: 47				
$UND7=\alpha+\beta_1*HSI+\beta_2*ACC2+\beta_3*ACC3+\beta_4*DP+\beta_5*GRO+\beta_6*US+\beta_7*ST+\beta_8*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.3359	0.5167	2.5855	0.0137
HSI	0.9288	0.3986	2.3299	0.0252
ACC2	-0.1968	0.1698	-1.1592	0.2536
ACC3	0.4429	0.1425	3.1091	0.0035
DP	-1.1496	0.4484	-2.5641	0.0144
GRO	-0.1081	0.0407	-2.6542	0.0115
US	0.3278	0.1698	1.9304	0.0610
ST	0.6899	0.3575	1.9299	0.0611
SEO	0.1342	0.1140	1.1773	0.2464
R-squared	0.4696	Mean dependent var		0.1855
Adjusted R-squared	0.3580	S.D. dependent var		0.4205
S.E. of regression	0.3369	Akaike info criterion		0.8323
Sum squared resid	4.3128	F-statistic		4.2063
Log likelihood	-10.5587	Prob(F-statistic)		0.0011

Model 4a:

Dependent Variable: UND3M				
Method: Least Squares				
Included observations: 47				
$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.8914	1.3418	-0.6643	0.5121
S	-0.7330	0.4702	-1.5588	0.1307
HSI	0.8704	0.4456	1.9536	0.0612
IBK1	-0.0706	0.2109	-0.3348	0.7404
IBK2	-0.1008	0.1775	-0.5682	0.5746
ACC1	0.0322	0.2651	0.1213	0.9044
ACC2	-0.0642	0.3065	-0.2093	0.8358
ACC3	0.1129	0.2846	0.3966	0.6947
ACC4	0.1266	0.3217	0.3935	0.6970
PB	0.2225	0.1765	1.2608	0.2182
LCA	0.3923	0.3642	1.0772	0.2909
LMC	-0.4330	0.3451	-1.2547	0.2203
LTA	0.2065	0.0988	2.0908	0.0461
RANGE	-0.1091	0.2408	-0.4530	0.6542
DP	-1.1716	0.9707	-1.2070	0.2379
EPS	0.4455	0.7672	0.5807	0.5663
EEPS	-0.5367	0.6938	-0.7735	0.4459
GRO	-0.0147	0.0448	-0.3269	0.7463
EGRO	0.1821	0.0795	2.2906	0.0300
US	-0.0901	0.1868	-0.4826	0.6333

R-squared	0.5553	Mean dependent var	0.1705
Adjusted R-squared	0.2423	S.D. dependent var	0.3585
S.E. of regression	0.3120	Akaike info criterion	0.8053
Sum squared resid	2.6287	F-statistic	1.7741
Log likelihood	1.0757	Prob(F-statistic)	0.0843

Model 4b:

Dependent Variable: UND3M				
Method: Least Squares				
Included observations: 47				
$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*PB+\beta_4*LAC+\beta_5*LMC+\beta_6*LTA+\beta_7*DP+\beta_8*EGRO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.0213	0.6510	0.0328	0.9740
S	-0.7146	0.3664	-1.9506	0.0585
HSI	0.8470	0.3164	2.6768	0.0109
PB	0.1704	0.1104	1.5439	0.1309
LAC	0.4680	0.2624	1.7834	0.0825
LMC	-0.4773	0.2500	-1.9092	0.0638
LTA	0.1673	0.0742	2.2559	0.0299
DP	-1.6748	0.4223	-3.9663	0.0003
EGRO	0.1533	0.0521	2.9390	0.0056
R-squared	0.4920	Mean dependent var		0.1705
Adjusted R-squared	0.3851	S.D. dependent var		0.3585
S.E. of regression	0.2811	Akaike info criterion		0.4701
Sum squared resid	3.0023	F-statistic		4.6013
Log likelihood	-2.0469	Prob(F-statistic)		0.0006

Model 4c:

Dependent Variable: UND3M				
Method: Least Squares				
Included observations: 47				
$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*IBK1+\beta_4*IBK2+\beta_5*ACC1+\beta_6*ACC2+\beta_7*ACC3+\beta_8*ACC4+\beta_9*PB+\beta_{10}*LCA+\beta_{11}*LMC+\beta_{12}*LTA+\beta_{13}*RANGE+\beta_{14}*DP+\beta_{15}*EPS+\beta_{16}*EEPS+\beta_{17}*GRO+\beta_{18}*EGRO+\beta_{19}*US+\beta_{20}*ST+\beta_{21}*SEO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-1.6960	1.3665	-1.2411	0.2261
S	-0.6135	0.4607	-1.3316	0.1950
HSI	0.7270	0.4431	1.6409	0.1133
IBK1	0.0510	0.2169	0.2350	0.8161
IBK2	-0.0082	0.1790	-0.0457	0.9639
ACC1	0.1720	0.2680	0.6419	0.5268
ACC2	0.0588	0.3047	0.1929	0.8486
ACC3	0.2703	0.2882	0.9380	0.3572
ACC4	0.2371	0.3180	0.7456	0.4629
PB	0.2180	0.1713	1.2727	0.2148
LCA	0.2009	0.3703	0.5424	0.5924
LMC	-0.2843	0.3502	-0.8120	0.4245
LTA	0.2081	0.0969	2.1474	0.0417
RANGE	-0.0981	0.2387	-0.4110	0.6846
DP	-0.7063	0.9843	-0.7176	0.4797
EPS	0.9725	0.8340	1.1660	0.2546
EEPS	-1.0466	0.7421	-1.4103	0.1708
GRO	-0.0290	0.0443	-0.6535	0.5194
EGRO	0.1905	0.0812	2.3464	0.0272
US	-0.2472	0.2105	-1.1746	0.2512
ST	0.4315	0.4449	0.9698	0.3415
SEO	0.2225	0.1309	1.6998	0.1016
R-squared	0.6134	Mean dependent var		0.1705
Adjusted R-squared	0.2886	S.D. dependent var		0.3585
S.E. of regression	0.3023	Akaike info criterion		0.7504
Sum squared resid	2.2853	F-statistic		1.8886
Log likelihood	4.3661	Prob(F-statistic)		0.0648

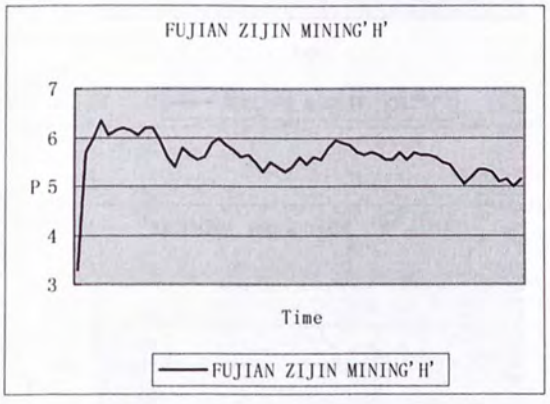
Model 4d:

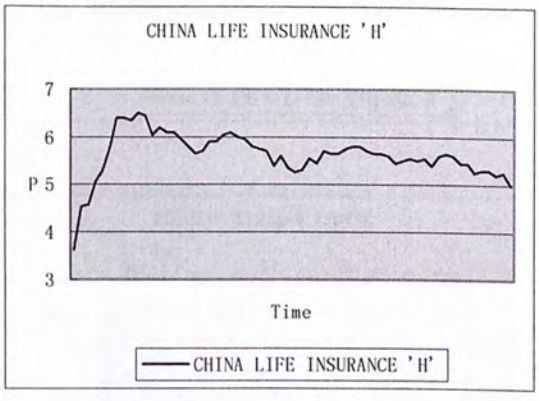
Dependent Variable: UND3M				
Method: Least Squares				
Included observations: 47				
$UND3M=\alpha+\beta_1*S+\beta_2*HSI+\beta_3*PB+\beta_4*LAC+\beta_5*LMC+\beta_6*LTA+\beta_7*DP+\beta_8*EGRO+\varepsilon$				
	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.0213	0.6510	0.0328	0.9740
S	-0.7146	0.3664	-1.9506	0.0585
HSI	0.8470	0.3164	2.6768	0.0109
PB	0.1704	0.1104	1.5439	0.1309
LAC	0.4680	0.2624	1.7834	0.0825
LMC	-0.4773	0.2500	-1.9092	0.0638
LTA	0.1673	0.0742	2.2559	0.0299
DP	-1.6748	0.4223	-3.9663	0.0003
EGRO	0.1533	0.0521	2.9390	0.0056
R-squared	0.4920	Mean dependent var		0.1705
Adjusted R-squared	0.3851	S.D. dependent var		0.3585
S.E. of regression	0.2811	Akaike info criterion		0.4701
Sum squared resid	3.0023	F-statistic		4.6013
Log likelihood	-2.0469	Prob(F-statistic)		0.0006

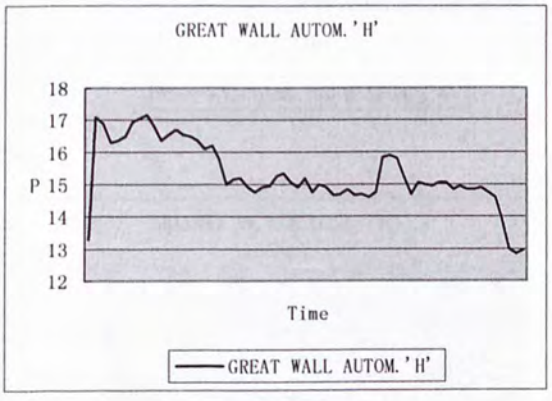
Appendix 2:

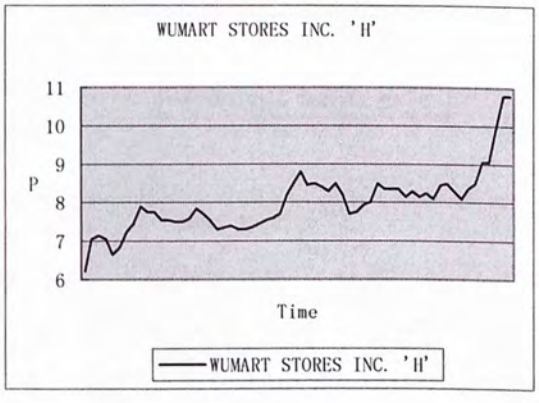
The Issue Price and Stock Price Movement after IPO for Each Sample Firm.

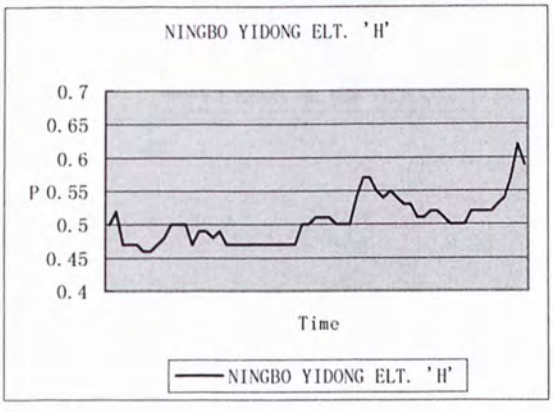
The following charts provide the issue prices and the closing prices of each trading day in the first 3 months after listing for 76 sample firms.

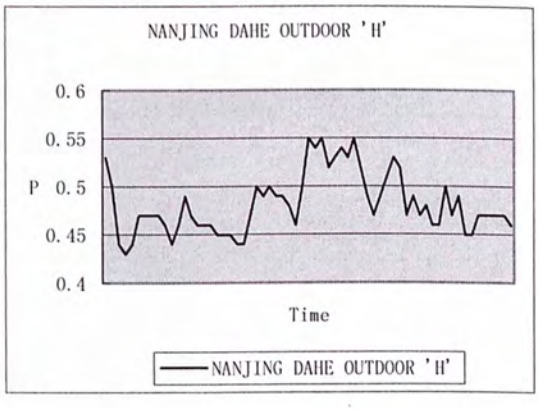


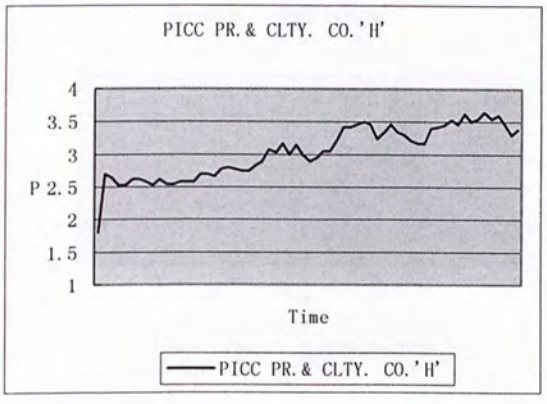


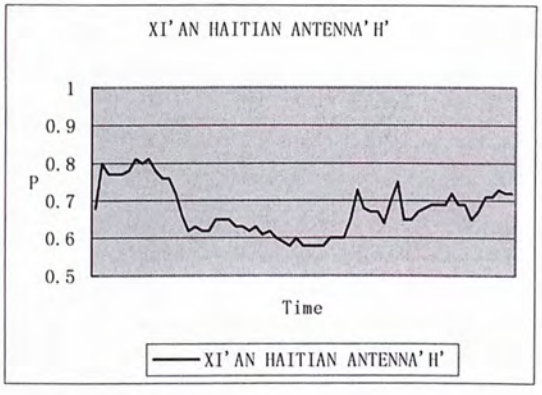


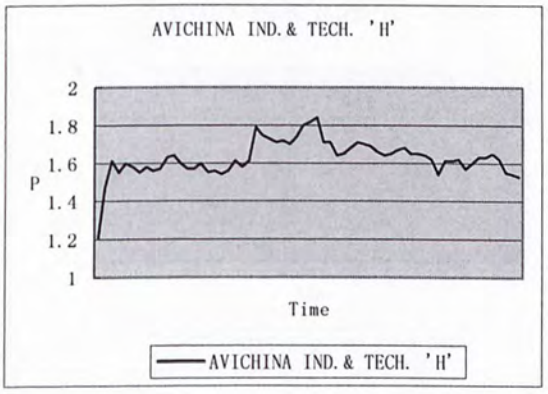


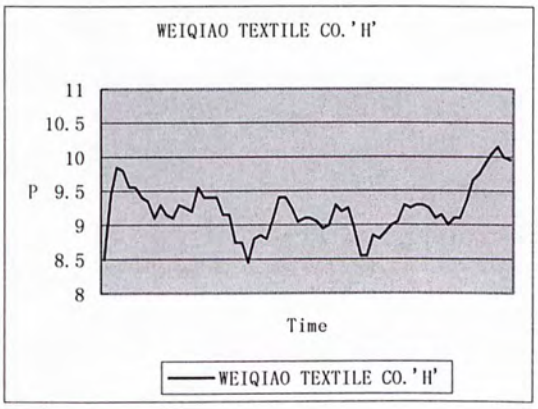


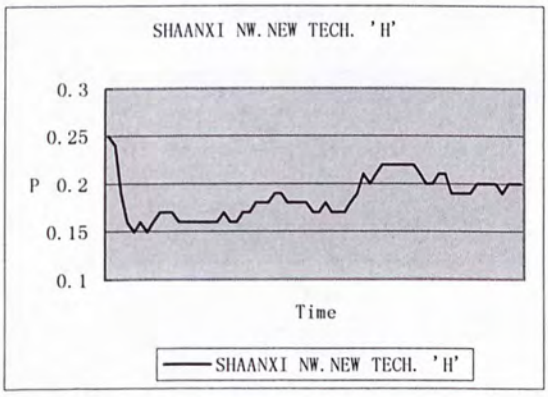


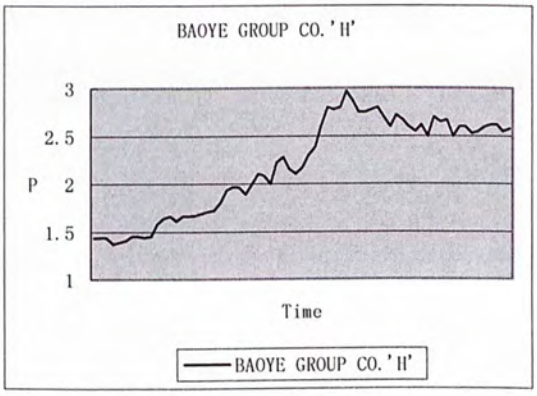

PICC PR.& CLTY. CO.'H'
4
3.5
3
P 2.5
2
1.5
1
Time
PICC PR.& CLTY. CO.'H'

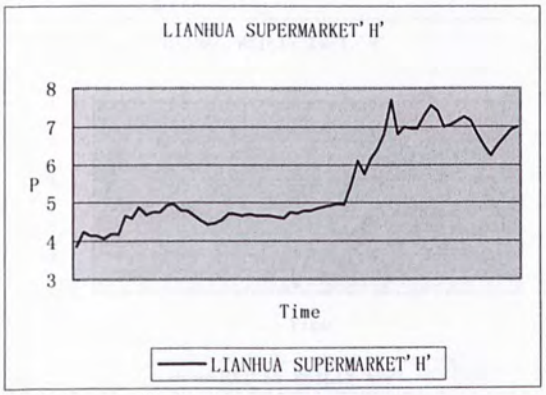

XI'AN HAITIAN ANTENNA'H'
1
0.9
0.8
P
0.7
0.6
0.5
Time
XI'AN HAITIAN ANTENNA'H'

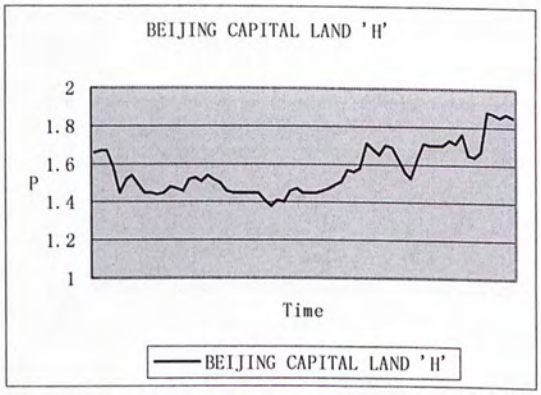

AVICHINA IND.& TECH. 'H'
2
1.8
1.6
P
1.4
1.2
1
Time
AVICHINA IND.& TECH. 'H'

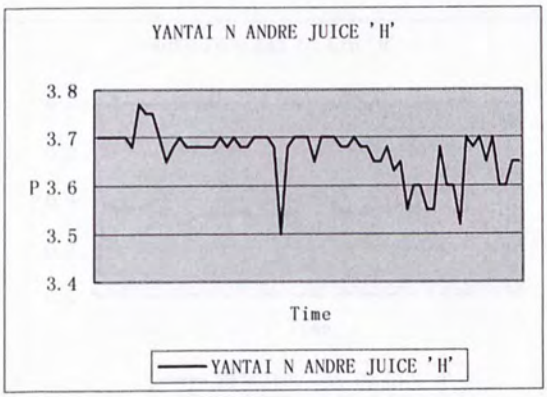

WEIQIAO TEXTILE CO.'H'
11
10.5
10
P 9.5
9
8.5
8
Time
WEIQIAO TEXTILE CO.'H'

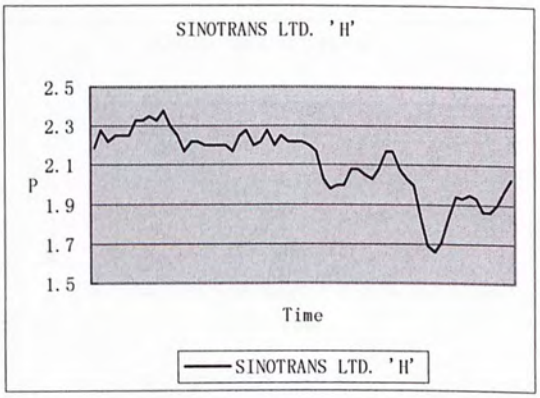

SHAANXI NW.NEW TECH. 'H'
0.3
0.25
P 0.2
0.15
0.1
Time
SHAANXI NW.NEW TECH. 'H'

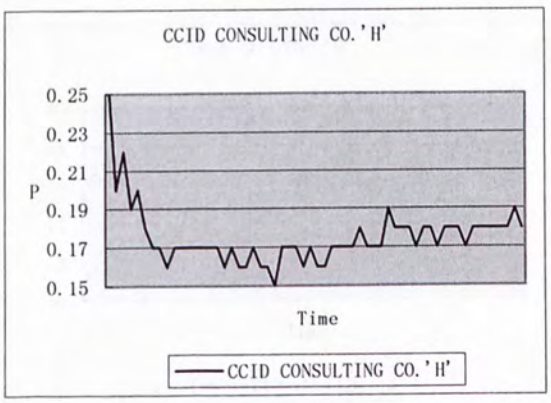

BAOYE GROUP CO.'H'
3
2.5
P 2
1.5
1
Time
BAOYE GROUP CO.'H'

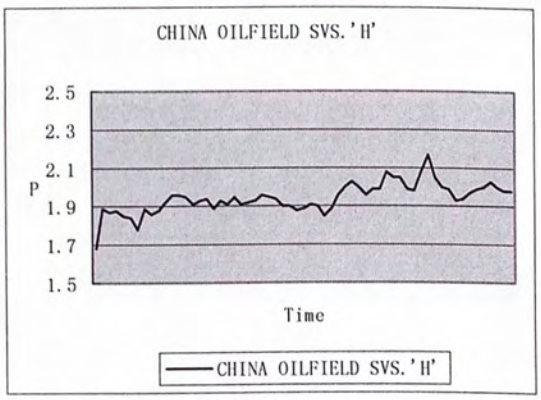

LIANHUA SUPERMARKET'H'
8
7
6
5
4
3
P
Time
LIANHUA SUPERMARKET'H'

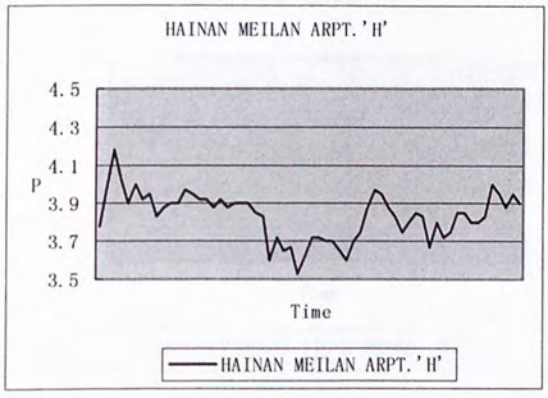

BEIJING CAPITAL LAND 'H'
2
1.8
1.6
1.4
1.2
1
P
Time
BEIJING CAPITAL LAND 'H'

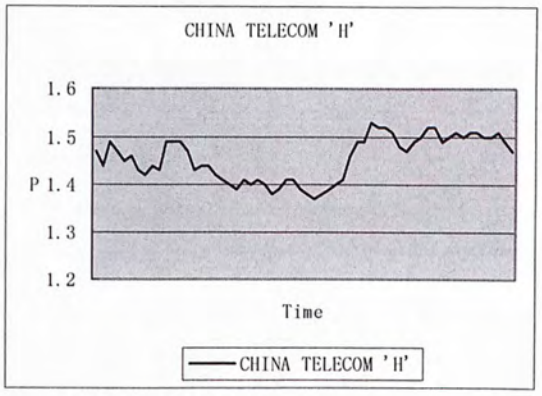

YANTAI N ANDRE JUICE 'H'
3.8
3.7
3.6
3.5
3.4
P
Time
YANTAI N ANDRE JUICE 'H'

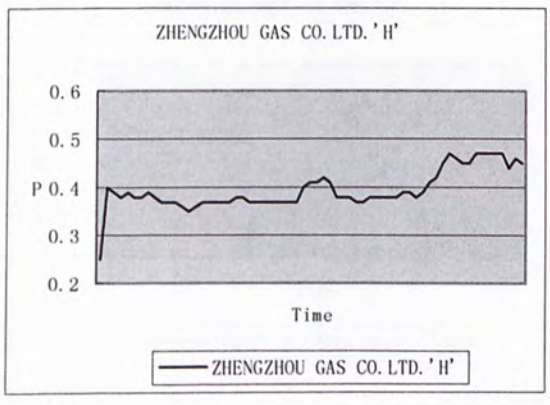

SINOTRANS LTD. 'H'
2.5
2.3
2.1
1.9
1.7
1.5
P
Time
SINOTRANS LTD. 'H'

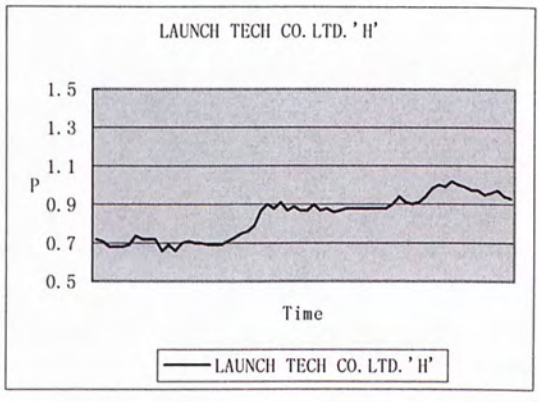

CCID CONSULTING CO.'H'
0.25
0.23
0.21
0.19
0.17
0.15
P
Time
CCID CONSULTING CO.'H'

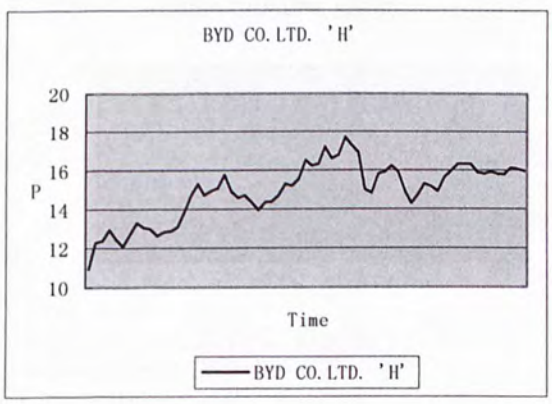

CHINA OILFIELD SVS.'H'
2.5
2.3
2.1
1.9
1.7
1.5
P
Time
CHINA OILFIELD SVS.'H'

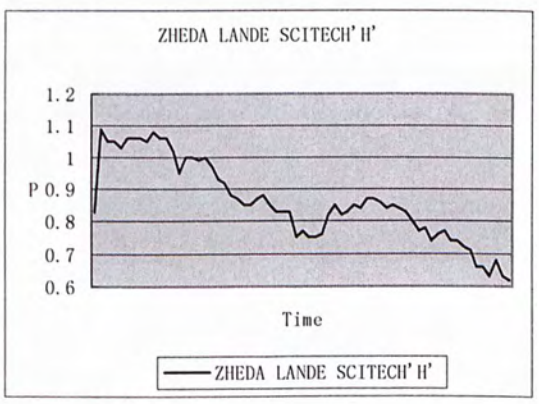

HAINAN MEILAN ARPT.'H'
4.5
4.3
4.1
P
3.9
3.7
3.5
Time
HAINAN MEILAN ARPT.'H'

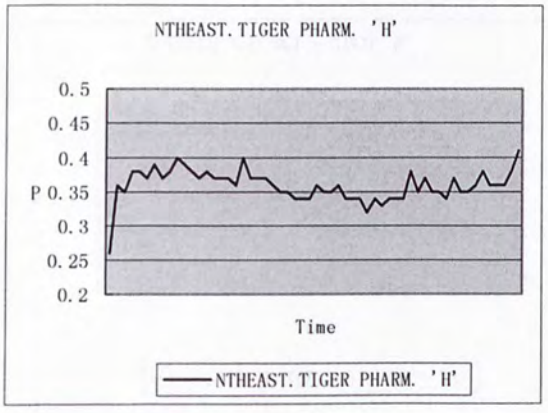

CHINA TELECOM 'H'
1.6
1.5
P 1.4
1.3
1.2
Time
CHINA TELECOM 'H'

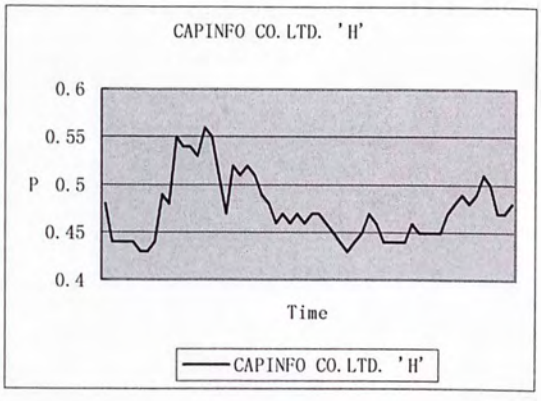

ZHENGZHOU GAS CO. LTD.'H'
0.6
0.5
P 0.4
0.3
0.2
Time
ZHENGZHOU GAS CO. LTD.'H'

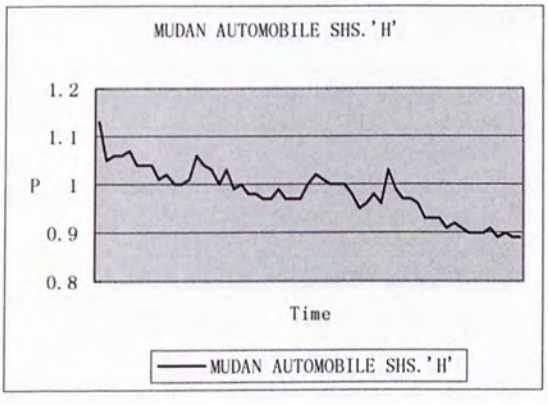

LAUNCH TECH CO. LTD.'H'
1.5
1.3
P
1.1
0.9
0.7
0.5
Time
LAUNCH TECH CO. LTD.'H'

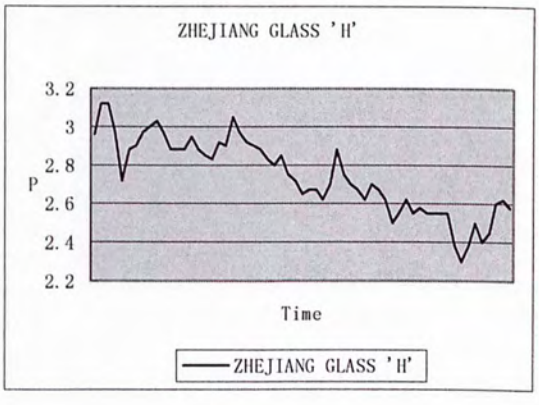

BYD CO. LTD. 'H'
20
18
16
P
14
12
10
Time
BYD CO. LTD. 'H'

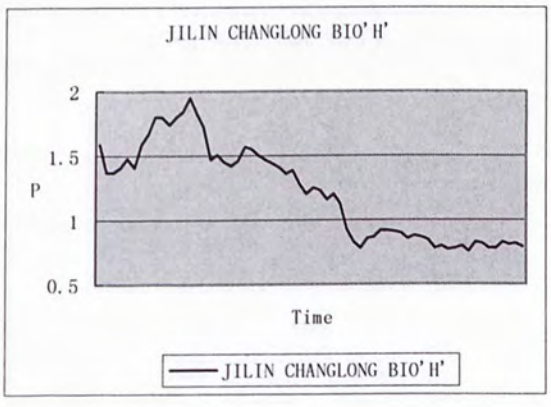

ZHEDA LANDE SCITECH'H'
1.2
1.1
1
P 0.9
0.8
0.7
0.6
Time
ZHEDA LANDE SCITECH'H'

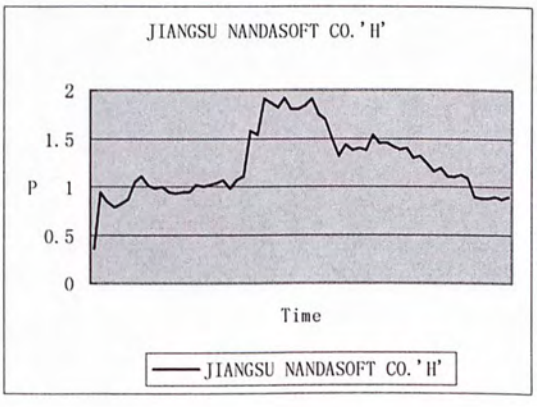

NTHEAST. TIGER PHARM. 'H'
0.5
0.45
0.4
P 0.35
0.3
0.25
0.2
Time
NTHEAST. TIGER PHARM. 'H'

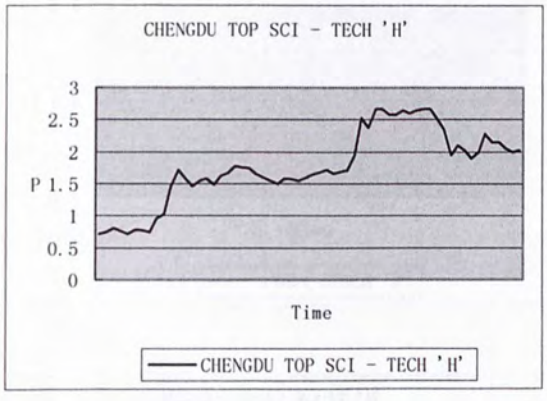

CAPINFO CO. LTD. 'H'
0.6
0.55
P 0.5
0.45
0.4
Time
CAPINFO CO. LTD. 'H'

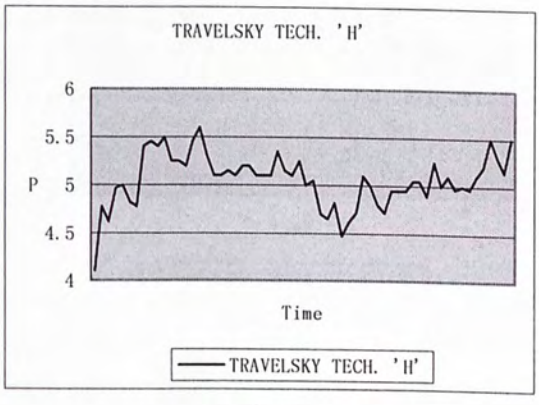

MUDAN AUTOMOBILE SHS. 'H'
1.2
1.1
P 1
0.9
0.8
Time
MUDAN AUTOMOBILE SHS. 'H'

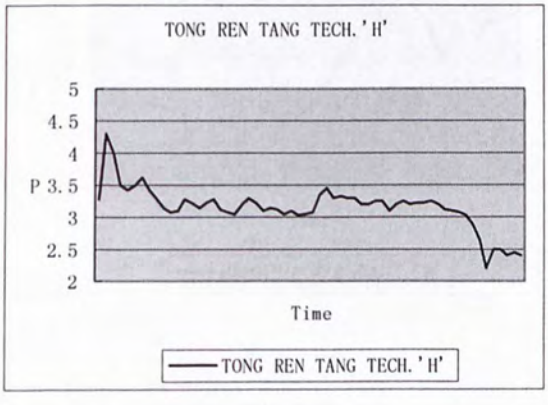

ZHEJIANG GLASS 'H'
3.2
3
2.8
P
2.6
2.4
2.2
Time
ZHEJIANG GLASS 'H'

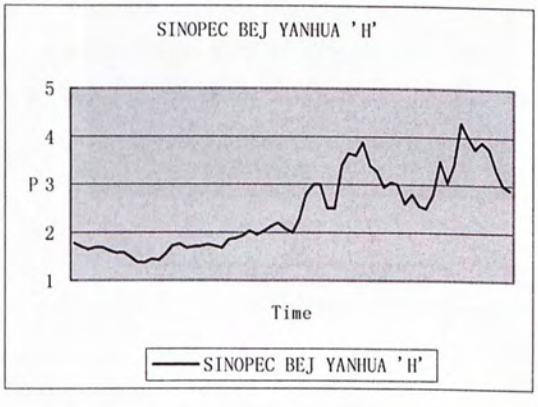

JILIN CHANGLONG BIO'H'
2
1.5
P
1
0.5
Time
JILIN CHANGLONG BIO'H'

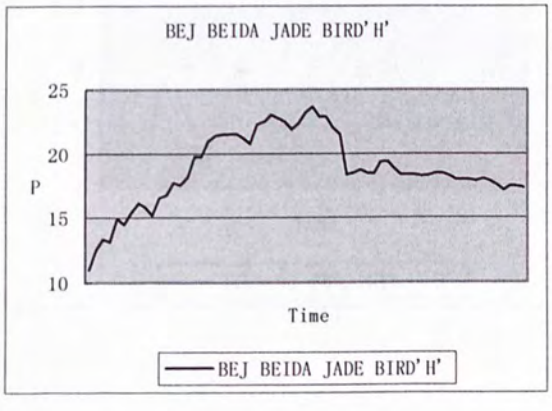

JIANGSU NANDASOFT CO.'H'
2
1.5
P 1
0.5
0
Time
JIANGSU NANDASOFT CO.'H'

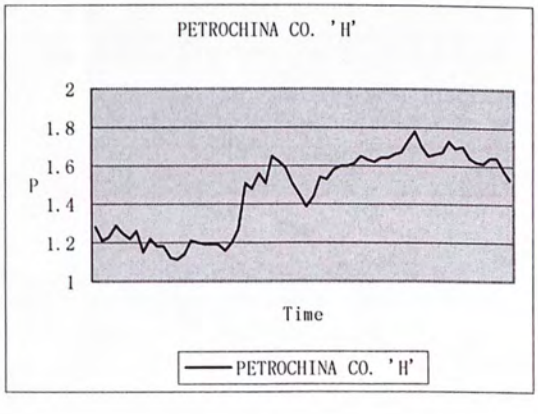

CHENGDU TOP SCI - TECH 'H'
3
2.5
2
P 1.5
1
0.5
0
Time
CHENGDU TOP SCI - TECH 'H'

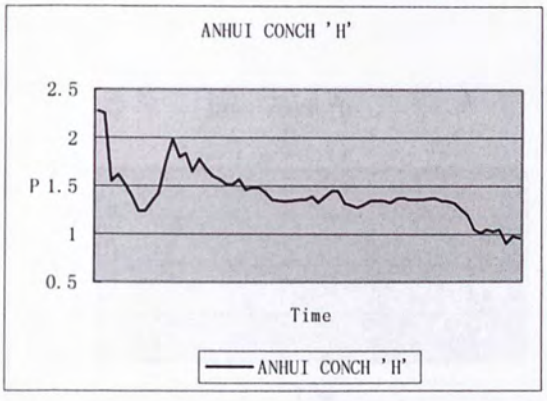

TRAVELSKY TECH. 'H'
6
5.5
P 5
4.5
4
Time
TRAVELSKY TECH. 'H'

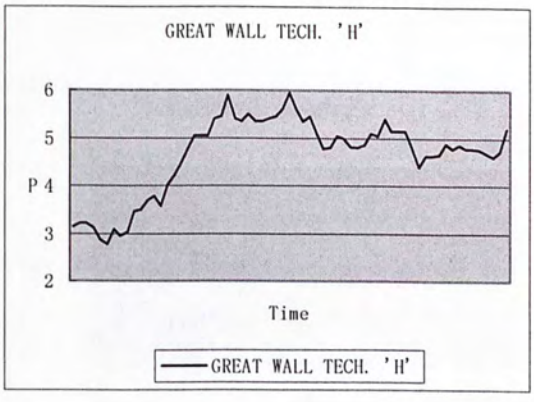

TONG REN TANG TECH.'H'
5
4.5
4
P 3.5
3
2.5
2
Time
TONG REN TANG TECH.'H'

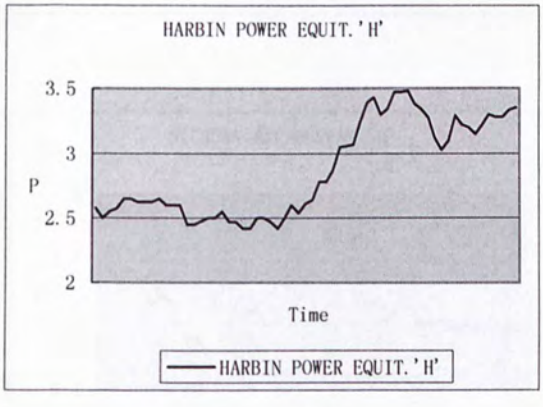

SINOPEC BEJ YANHUA 'H'
5
4
P 3
2
1
Time
SINOPEC BEJ YANHUA 'H'

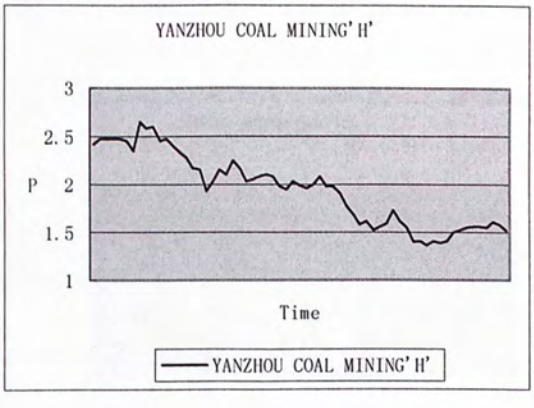

BEJ BEIDA JADE BIRD'H'
25
20
P
15
10
Time
BEJ BEIDA JADE BIRD'H'

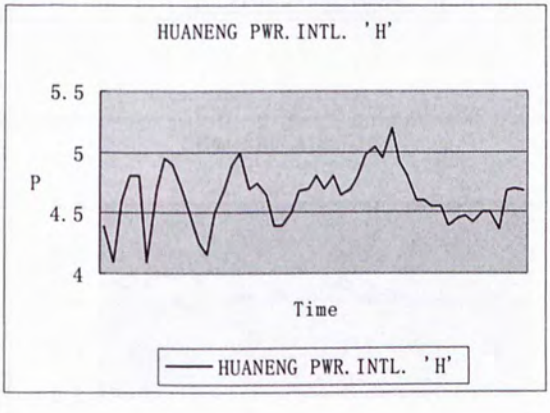

PETROCHINA CO. 'H'
2
1.8
1.6
P
1.4
1.2
1
Time
PETROCHINA CO. 'H'

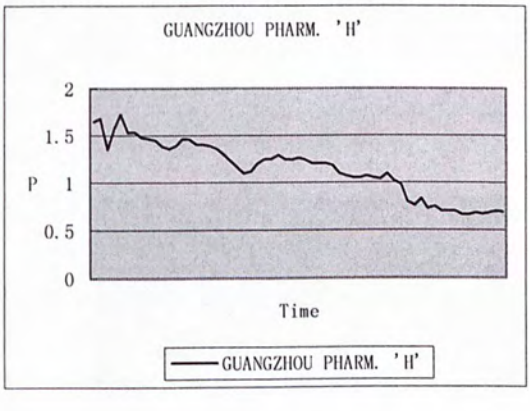

ANHUI CONCH 'H'
2.5
2
P 1.5
1
0.5
Time
ANHUI CONCH 'H'

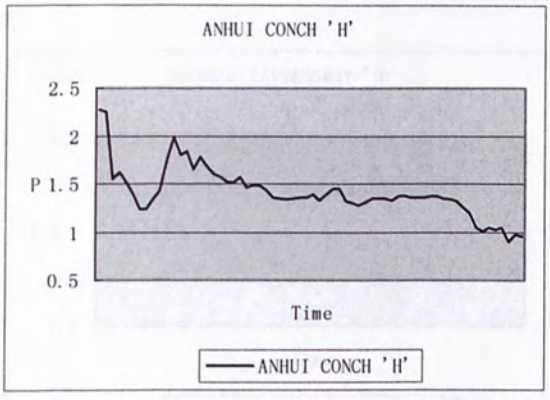

GREAT WALL TECH. 'H'
6
5
P 4
3
2
Time
GREAT WALL TECH. 'H'

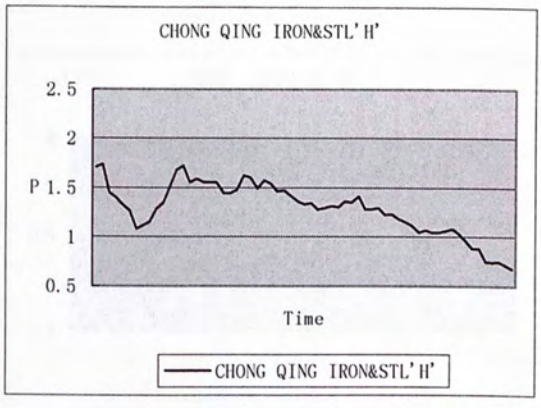

HARBIN POWER EQUIT.'H'
3.5
3
P
2.5
2
Time
HARBIN POWER EQUIT.'H'

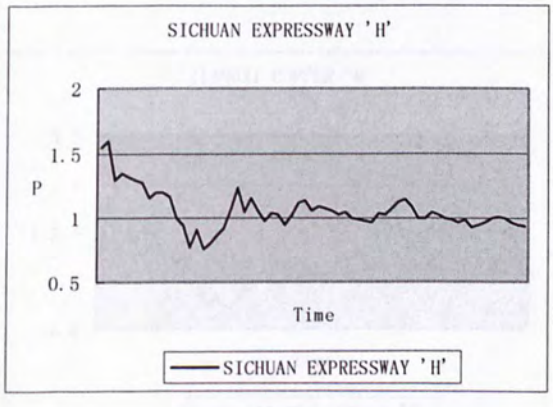

YANZHOU COAL MINING'H'
3
2.5
P 2
1.5
1
Time
YANZHOU COAL MINING'H'

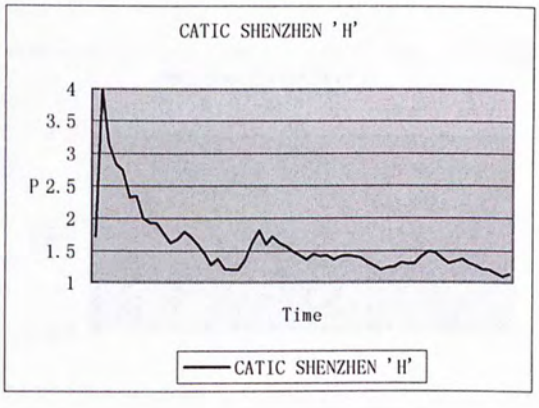

HUANENG PWR. INTL. 'H'
5.5
5
P
4.5
4
Time
HUANENG PWR. INTL. 'H'

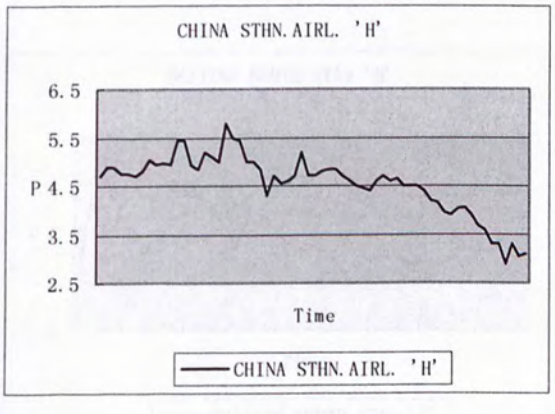

GUANGZHOU PHARM. 'H'
2
1.5
P 1
0.5
0
Time
GUANGZHOU PHARM. 'H'

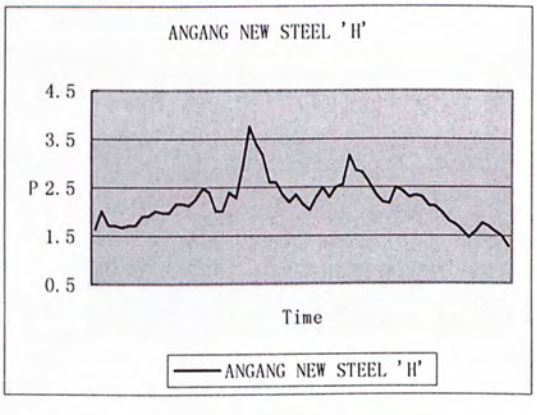

ANHUI CONCH 'H'
2.5
2
P 1.5
1
0.5
Time
ANHUI CONCH 'H'

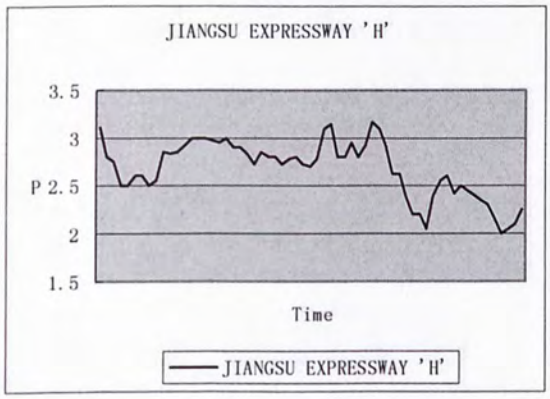

CHONG QING IRON&STL'H'
2.5
2
P 1.5
1
0.5
Time
CHONG QING IRON&STL'H'

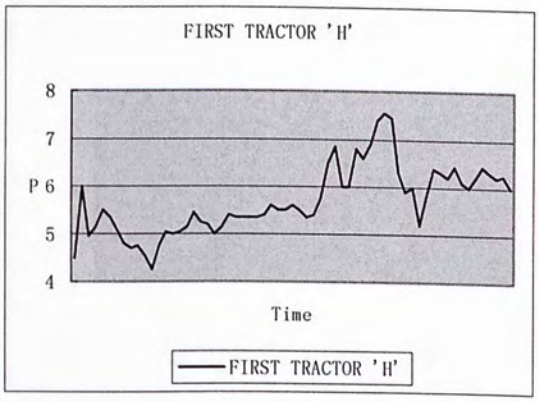

SICHUAN EXPRESSWAY 'H'
2
1.5
P
1
0.5
Time
SICHUAN EXPRESSWAY 'H'

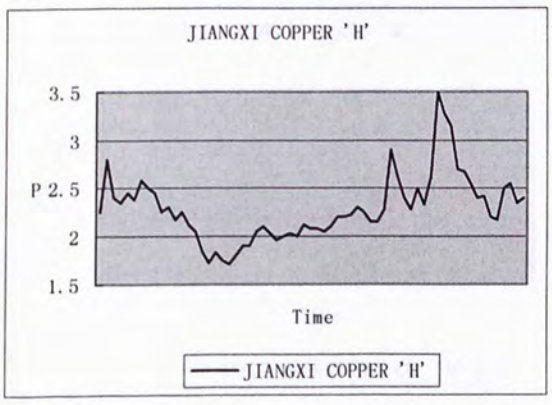

CATIC SHENZHEN 'H'
4
3.5
3
P 2.5
2
1.5
1
Time
CATIC SHENZHEN 'H'

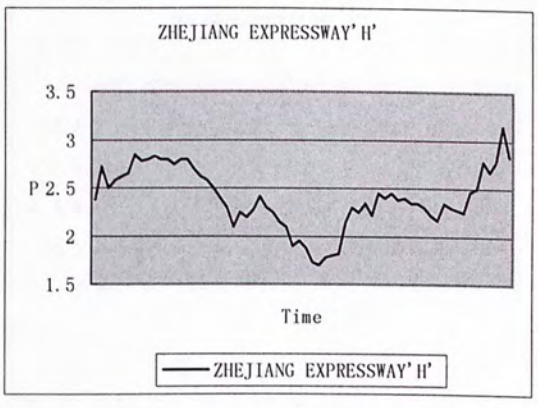

CHINA STHN.AIRL. 'H'
6.5
5.5
P 4.5
3.5
2.5
Time
CHINA STHN.AIRL. 'H'

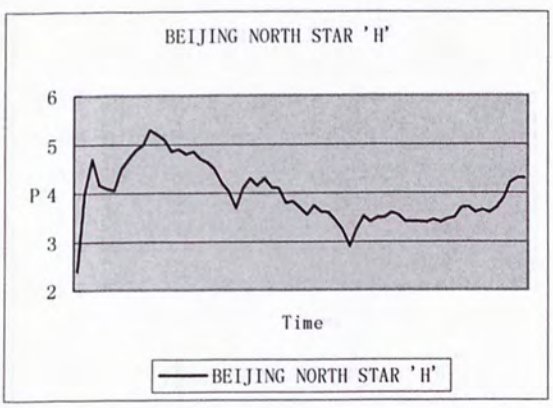

ANGANG NEW STEEL 'H'
4.5
3.5
P 2.5
1.5
0.5
Time
ANGANG NEW STEEL 'H'

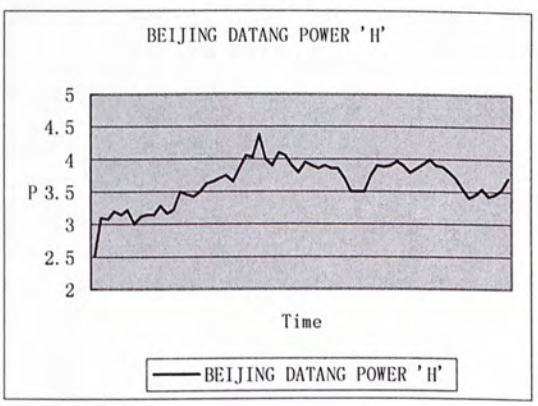

JIANGSU EXPRESSWAY 'H'
3.5
3
P 2.5
2
1.5
Time
JIANGSU EXPRESSWAY 'H'

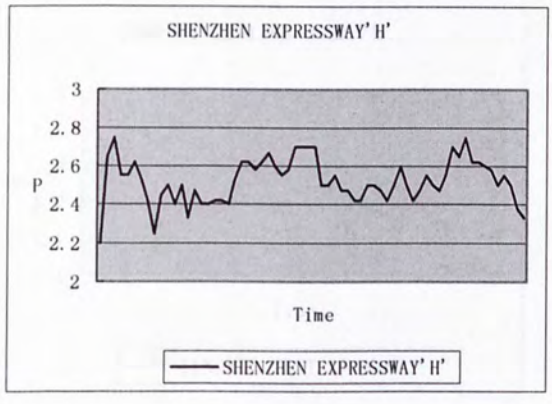

FIRST TRACTOR 'H'
8
7
P 6
5
4
Time
FIRST TRACTOR 'H'

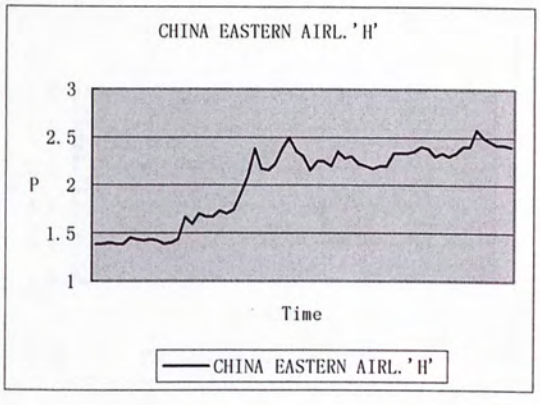

JIANGXI COPPER 'H'
3.5
3
P 2.5
2
1.5
Time
JIANGXI COPPER 'H'

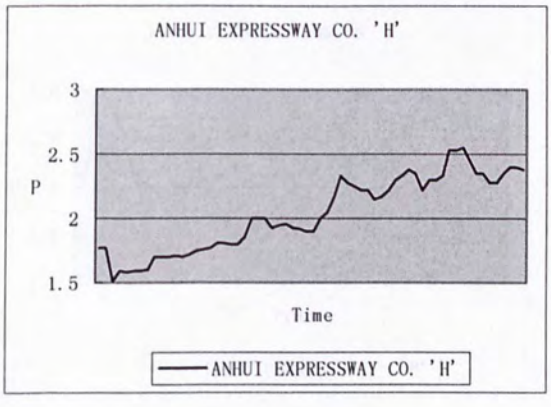

ZHEJIANG EXPRESSWAY'H'
3.5
3
P 2.5
2
1.5
Time
ZHEJIANG EXPRESSWAY'H'

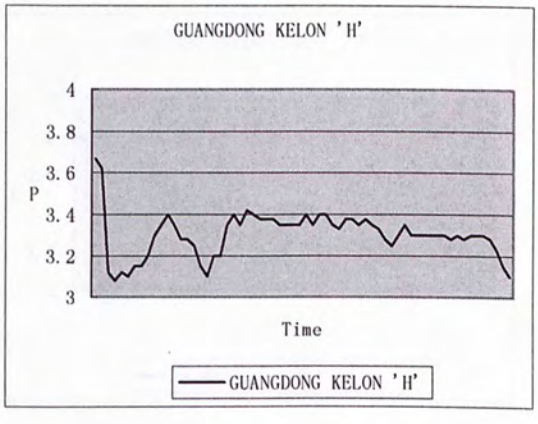

BEIJING NORTH STAR 'H'
6
5
P 4
3
2
Time
BEIJING NORTH STAR 'H'

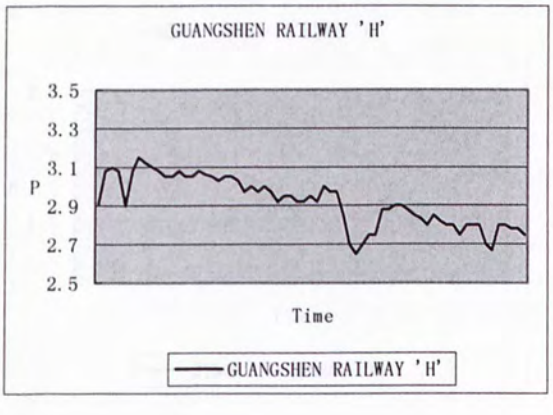

BEIJING DATANG POWER 'H'
5
4.5
4
P 3.5
3
2.5
2
Time
BEIJING DATANG POWER 'H'

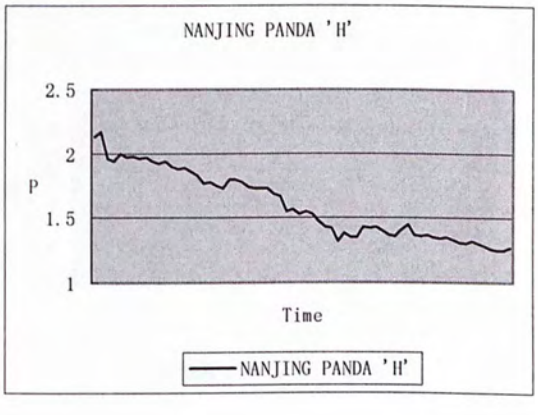

SHENZHEN EXPRESSWAY' H'
3
2.8
2.6
2.4
2.2
2
P
Time
SHENZHEN EXPRESSWAY' H'

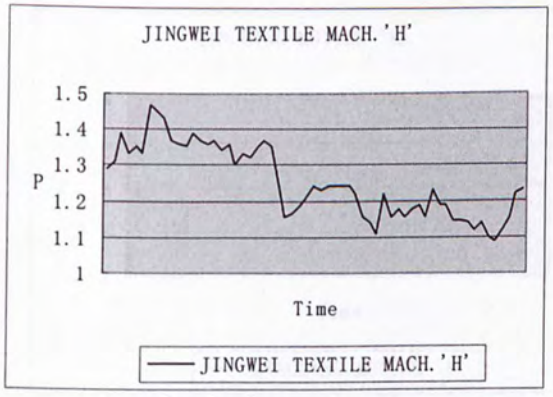

CHINA EASTERN AIRL.' H'
3
2.5
2
1.5
1
P
Time
CHINA EASTERN AIRL.' H'

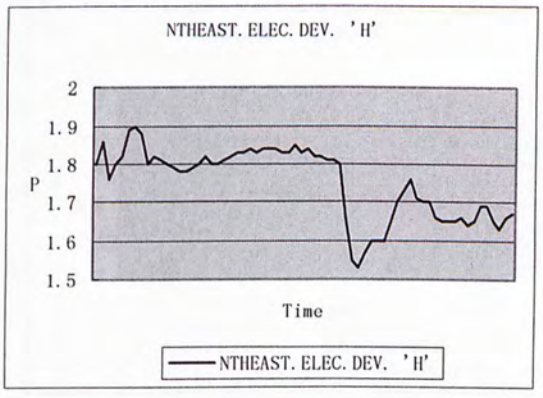

ANHUI EXPRESSWAY CO. ' H'
3
2.5
2
1.5
P
Time
ANHUI EXPRESSWAY CO. ' H'

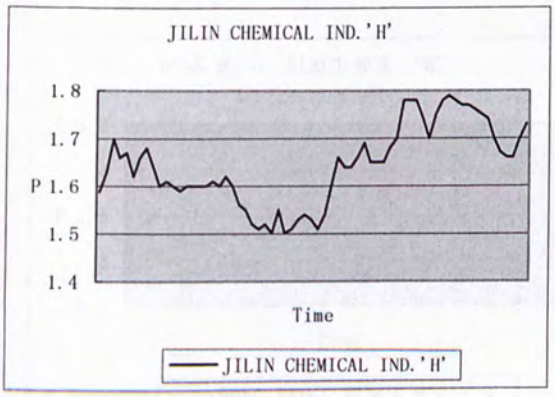

GUANGDONG KELON ' H'
4
3.8
3.6
3.4
3.2
3
P
Time
GUANGDONG KELON ' H'

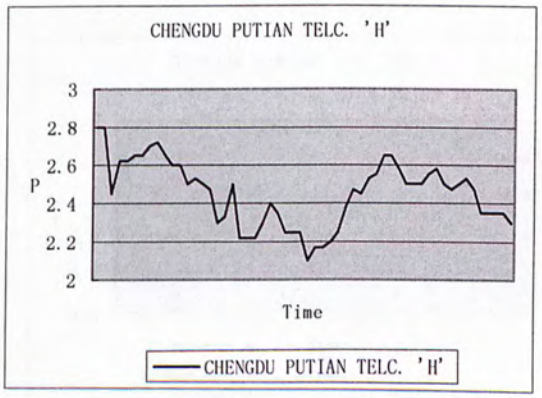

GUANGSHEN RAILWAY ' H'
3.5
3.3
3.1
2.9
2.7
2.5
P
Time
GUANGSHEN RAILWAY ' H'

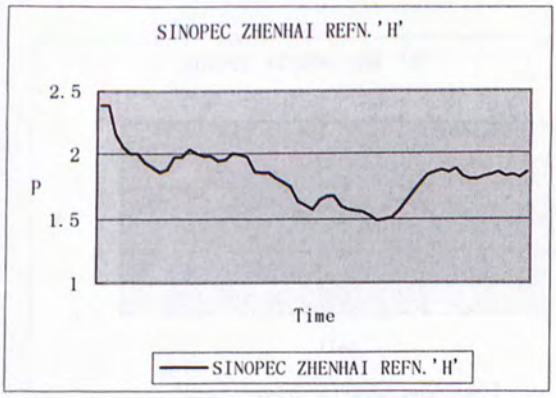

NANJING PANDA ' H'
2.5
2
1.5
1
P
Time
NANJING PANDA ' H'

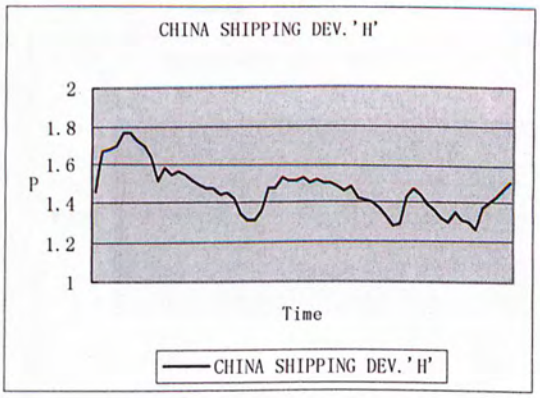

JINGWEI TEXTILE MACH.'H'
1.5
1.4
1.3
1.2
1.1
1
P
Time
JINGWEI TEXTILE MACH.'H'

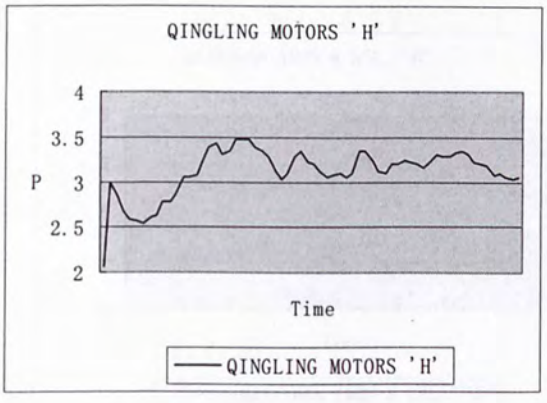

NTHEAST. ELEC. DEV. 'H'
2
1.9
1.8
1.7
1.6
1.5
P
Time
NTHEAST. ELEC. DEV. 'H'

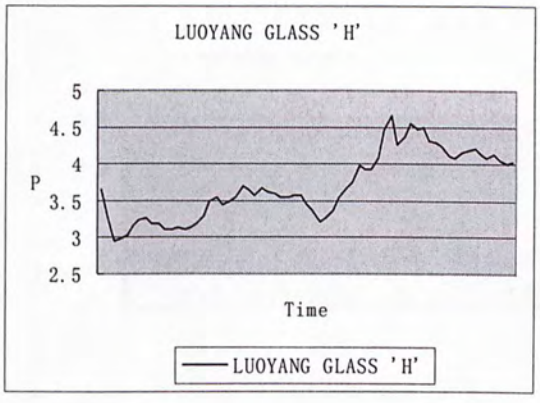

JILIN CHEMICAL IND.'H'
1.8
1.7
P 1.6
1.5
1.4
Time
JILIN CHEMICAL IND.'H'

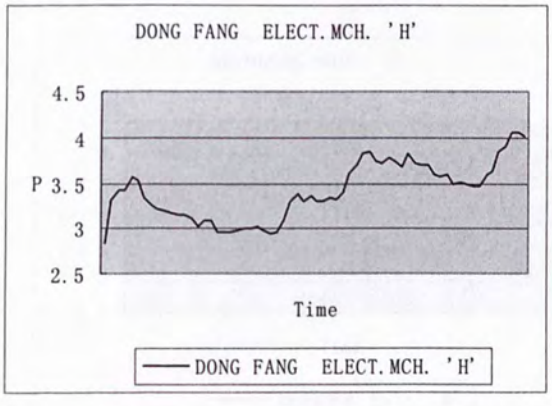

CHENGDU PUTIAN TELC. 'H'
3
2.8
2.6
2.4
2.2
2
P
Time
CHENGDU PUTIAN TELC. 'H'

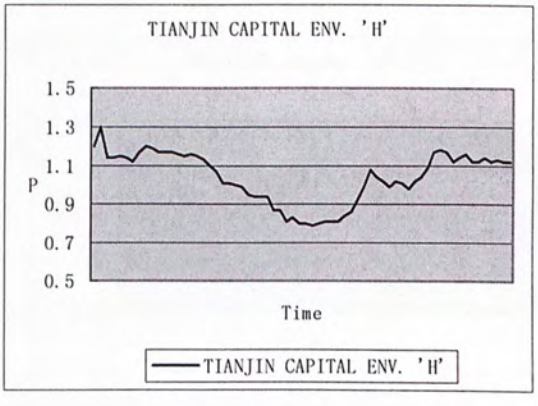

SINOPEC ZHENHAI REFN.'H'
2.5
2
1.5
1
P
Time
SINOPEC ZHENHAI REFN.'H'

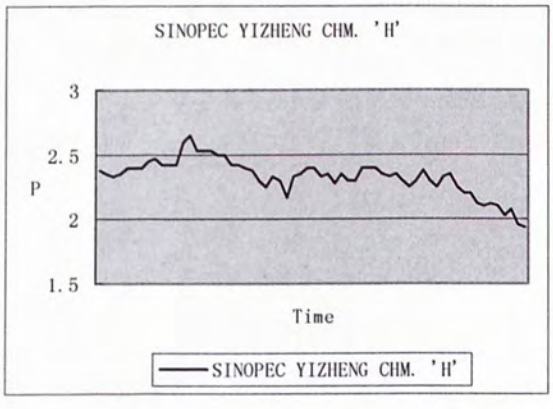

CHINA SHIPPING DEV.'H'
2
1.8
1.6
1.4
1.2
1
P
Time
CHINA SHIPPING DEV.'H'

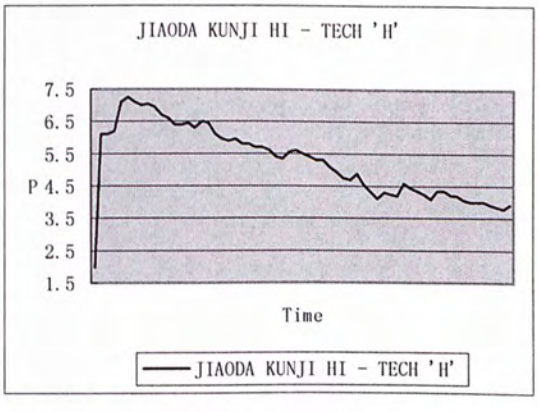

QINGLING MOTORS 'H'
4
3.5
P 3
2.5
2
Time
QINGLING MOTORS 'H'

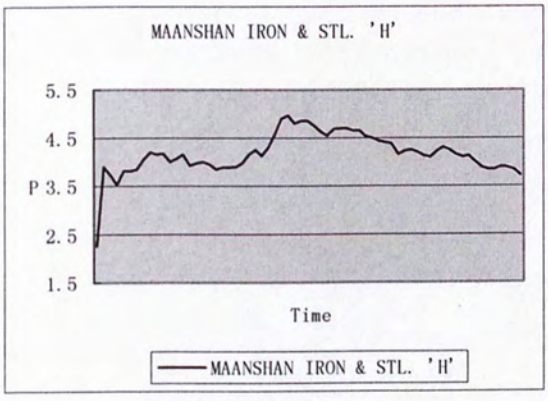

LUOYANG GLASS 'H'
5
4.5
4
P
3.5
3
2.5
Time
LUOYANG GLASS 'H'

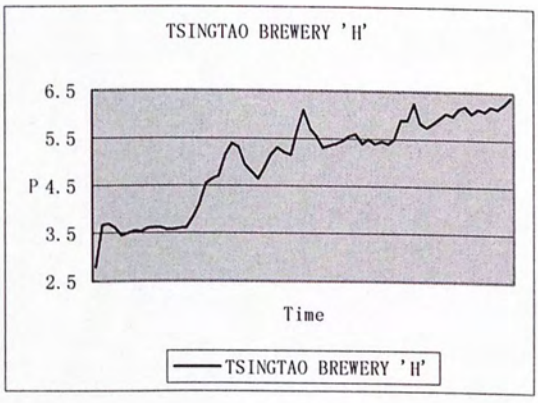

DONG FANG ELECT.MCH. 'H'
4.5
4
P 3.5
3
2.5
Time
DONG FANG ELECT.MCH. 'H'

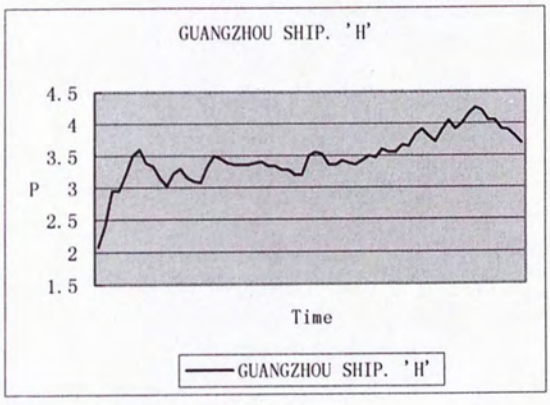

TIANJIN CAPITAL ENV. 'H'
1.5
1.3
1.1
P
0.9
0.7
0.5
Time
TIANJIN CAPITAL ENV. 'H'

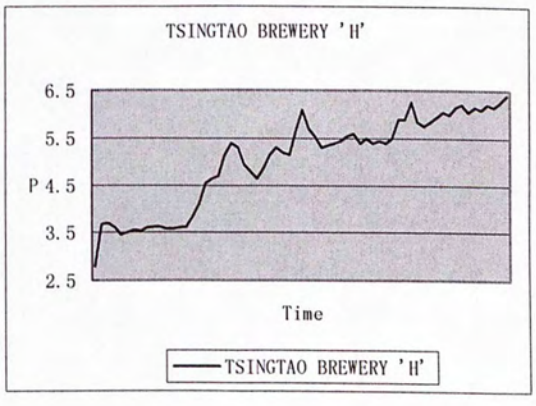

SINOPEC YIZHENG CHM. 'H'
3
2.5
P
2
1.5
Time
SINOPEC YIZHENG CHM. 'H'


JIAODA KUNJI HI - TECH 'H'
7.5
6.5
5.5
P 4.5
3.5
2.5
1.5
Time
JIAODA KUNJI HI - TECH 'H'


MAANSHAN IRON & STL. 'H'
5.5
4.5
P 3.5
2.5
1.5
Time
MAANSHAN IRON & STL. 'H'


TSINGTAO BREWERY 'H'
6.5
5.5
P 4.5
3.5
2.5
Time
TSINGTAO BREWERY 'H'


GUANGZHOU SHIP. 'H'
4.5
4
3.5
P 3
2.5
2
1.5
Time
GUANGZHOU SHIP. 'H'


TSINGTAO BREWERY 'H'
6.5
5.5
P 4.5
3.5
2.5
Time
TSINGTAO BREWERY 'H'